R E P O R T   R E S U M E S

ED 012 844   AC 000 772

PUBLIC INTEREST ISSUES, AND SUPPLEMENTAL LEGAL BRIEF, BEFORE THE FEDERAL COMMUNICATIONS COMMISSION, IN THE MATTER OF THE ESTABLISHMENT OF DOMESTIC COMMUNICATIONS SATELLITE FACILITIES BY NON-GOVERNMENTAL ENTITIES, DOCKET 16495.
FORD FOUNDATION, NEW YORK, N.Y.

PUB DATE 3 APR 67

EDRS PRICE MF-$0.50 HC-$4.28 107P.

DESCRIPTORS- *COMMUNICATION SATELLITES, *PUBLIC TELEVISION, *LEGAL PROBLEMS, *ADMINISTRATIVE ORGANIZATION, *INTERAGENCY COOPERATION, FINANCIAL POLICY, PROGRAMING, FEDERAL LEGISLATION, PUBLIC POLICY, EXPERIMENTAL PROJECTS, PROGRAM COSTS, STATISTICAL DATA, COMMERCIAL TELEVISION, FEDERAL COMMUNICATIONS COMMISSION, COMSAT, AMERICAN TELEPHONE AND TELEGRAPH, FORD FOUNDATION, UNITED STATES,

VOLUME I OF THE FORD FOUNDATION RESPONSE TO THE ORIGINAL AND SUPPLEMENTAL FEDERAL COMMUNICATIONS COMMISSION (FCC) NOTES OF INQUIRY CONTAINS SUGGESTIONS FOR COOPERATION BETWEEN THE PROPOSED SYSTEMS OF THE CORPORATION FOR PUBLIC TELEVISION (CPTV) AND THE BROADCASTERS' NONPROFIT SATELLITE CORPORATION (BNSC) ON STRUCTURE, FISCAL POLICY, AND PROGRAMING, SENATE AND PRESIDENTIAL PROPOSALS FOR CPTV, THE PRESIDENT'S ORDER FOR A NATIONAL TEST SATELLITE PROGRAM, THE FORD FOUNDATION STATEMENTS ON PERTINENT ISSUES, AND ITS RECOMMENDATIONS FOR A FAVORABLE FCC POLICY DECLARATION ON BNSC. TESTIMONY IN VOLUME II, PRIMARILY A REPLY TO OBJECTIONS RAISED IN THE COMSAT SUPPLEMENTAL BRIEF OF DECEMBER 1966, ASSERTS THE POWER OF THE FCC TO AUTHORIZE NONCOMMON CARRIER COMMUNICATION SATELLITE FACILITIES TO MEET SPECIALIZED DOMESTIC NEEDS, AND ARGUES THAT THE PROPOSED ORGANIZATION AND OPERATIONS OF BNSC WOULD NOT CONFLICT WITH OTHER LEGISLATION. (VOLUME I INCLUDES APPENDIXES WHICH COMPARE AND CRITICALLY EVALUATE SATELLITE SYSTEM PROPOSALS MADE BY THE FORD FOUNDATION, COMSAT, AND AMERICAN TELEPHONE AND TELEGRAPH COMPANY.) (LY)

ED012844

VOLUME I

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D. C. 20554

In the Matter of the

Establishment of domestic communications satellite facilities by non-governmental entities.

DOCKET
No. 16495

PUBLIC INTEREST ISSUES

SUPPLEMENTAL COMMENTS OF THE FORD FOUNDATION IN RESPONSE TO THE COMMISSION'S NOTICE OF INQUIRY OF MARCH 2, 1966, AND SUPPLEMENTAL NOTICE OF INQUIRY OF OCTOBER 20, 1966.

April 3, 1967

The Ford Foundation
New York, New York

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

AC000772

THE FORD FOUNDATION
477 MADISON AVENUE
NEW YORK, NEW YORK 10022

McGEORGE BUNDY
PRESIDENT

April 3, 1967

Dear Mr. Chairman:

I enclose herewith the supplemental comments of the Ford Foundation in the proceedings of your Commission on domestic communications satellites (Docket No. 16495). Once again I am sending copies of this letter and of our comments to each of your colleagues.

There is no occasion in this covering note for any extensive additional discussion. The general cause of public television has been greatly advanced since December by the decisive leadership of President Johnson in his Message to Congress and by the report of the Carnegie Commission. Attention now properly focuses upon the consideration by the Congress of the bill submitted by Senator Magnuson. (S.1160) As our supplemental comments show, the Ford Foundation strongly supports the President's position and the bill submitted by Senator Magnuson. The Foundation is also in strong general agreement with the eloquent and persuasive report of the Carnegie Commission.

In this new situation, we believe that the Federal Communications Commission has a major opportunity to advance the public interest by an appropriate declaration of its own policy, and the current submission outlines the elements which we think should be a part of such a declaration. The Commission's authority is clear; so is its present opportunity to share in the constructive leadership which has been shown both in the Executive Branch and the Congress.

The outlook for public television has never been brighter. The constructive role of the satellite in this future is more and more plain. The Commission now has an historic opportunity to enlarge these prospects by clear and positive findings.

Sincerely,

McGeorge Bundy

The Honorable Rosel H. Hyde
Chairman
Federal Communications Commission
Washington, D.C.

NOTE

The Foundation's supplemental comments to the Commission's Notice of Inquiry of March 2, 1966, as amended by the Supplemental Notice of Inquiry of October 20, 1966, are submitted in two volumes:

Volume I - Public Interest Issues

Supplemental Comments of the Ford Foundation in Response to the Commission's Notice of Inquiry of March 2, 1966, and Supplemental Notice of Inquiry of October 20, 1966.

Volume II - Supplemental Legal Brief

Supplemental Legal Brief and Comments of the Ford Foundation.

The Foundation is not this time submitting technical and economic comments in a separate volume. Appendix A to Volume I is a comparative description of the satellite systems proposed by the Foundation, Comsat, and AT&T; Appendix B is a critical evaluation prepared at the Foundation's request by Hammett & Edison, Consulting Radio Engineers.

VOLUME I

TABLE OF CONTENTS

I. INTRODUCTION 1

II. THE RELATIONSHIP BETWEEN THE FORD PROPOSALS AND THE CARNEGIE REPORT 5

1. Structure 6
2. Funding 7
3. Networking, Local Stations, and Free Rates 9

III. THE PRESIDENT'S MESSAGE AND S. 1160 11

1. Structure 12
2. Funding 12
3. Networking, Local Stations, and Free Rates 13

IV. A NATIONAL TEST SATELLITE PROGRAM 14

V. OTHER PUBLIC INTEREST ISSUES 18

1. Competition v. Monopoly 19
2. Conflicts of Interest 22
3. Economies of Scale 24

VI. RECOMMENDATIONS 25

APPENDIX A

Comparative Description of Satellite Systems Proposed by the Foundation, Comsat, and AT&T

APPENDIX B

Critical Evaluation of the Technical and Economic Comments of the Foundation, Comsat, and AT&T, by Hammett & Edison

I. INTRODUCTION

Three events of vital importance to the future of domestic communications-satellite systems and educational television have occurred since the December 1966 submissions.

On February 28, 1967, the President sent to the Congress a Message on Education and Health in America, recommending enactment of the Public Television Act of 1967 and other measures in support of educational television.

On January 23, 1967, the Carnegie Commission on Educational Television published its report and recommendations.

On March 2, 1967, Senator Magnuson introduced the Public Television Act of 1967 (S.1160), which will shortly be the subject of hearings before the Senate Commerce Committee.

We see these developments as directly related to the Commission's Notice of Inquiry. In calling for the creation of the Corporation for Public Television, the President said that "One of the Corporation's first tasks should be to study the practicality and the economic advantages of using communications satellites to establish an educational and radio network." The President also said that "Formulation of long-range policies concerning the future of satellite communication requires the most detailed and comprehensive study by the Executive Branch and the Congress." The Carnegie Report had already recommended "that Congress consider legislative directives that would make possible free satellite interconnections for educational television to the extent that this is not provided for under existing law." (Bantam ed., p. 57)

We believe that the Commission has ample power to dispose of the issues raised in this proceeding, and strongly urge the Commission to do so. In Part VI below, therefore, the Foundation recommends a specific course of action that will enable the Commission to move forward pending further study by the Executive Branch, by the Congress and, if S.1160 becomes law, by the Corporation for Public Television.

However, the President's Message and subsequent developments may make it appropriate for the Commission to defer final authorization of particular satellite systems for one year. We see two additional reasons in the international sphere for withholding action on the ownership and structure of communications-satellite systems in the domestic sphere. First, departments and agencies within the Executive Branch are currently determining the United States' position with respect to renewal of the Intelsat agreements. Second, an intragovernmental committee has recommended permissive antitrust legislation which anticipates that Comsat may become a chosen instrument to provide all the United States requirements for overseas record and voice transmissions.

The Ford Foundation entered this proceeding last August to assert the fundamental proposition that any national decision on the future of domestic communications satellites should take account of the needs of educational television. That proposition now finds clear expression in the President's Message, the Carnegie Report, and S.1160 and appears to be generally accepted. Educational television struggles for existence. Communications satellites will permit great savings over the cost of transmission by conventional land facilities. Indeed satellite channels can open the way to entirely new levels of quantity and quality in the distribution of public and instructional programs for use in homes and schools. But the unlimited promise of educational television cannot be realized without new institutional arrangements and new sources of financing.

It is not only accidents of history that bring educational television and domestic communications satellites to the front of the national stage together. Simultaneous concurrence of activity on both fronts in Washington is indeed coincidental. The expiration in 1967 of the Educational Television Facilities Act and the appointment of the Carnegie Commission on Educational Television are responsible for renewed attention to educational television; the progress of technology and the Notice of the Commission have put the spotlight on satellites for domestic use. But the relationship between the two is far more compelling than this coincidence.

First, non-commercial television is a vital but mostly undeveloped public resource.

Second, satellites are a product of the taxpayers' investment, and taxpayers have a powerful interest in the savings that will flow from the use of satellites.

Third, the profits of television and radio transmission depend on access to a scarce and precious public resource, the frequency spectrum, for which no charge is presently levied.

For reasons developed in the Foundation's August Submission, and expanded in December, we see in a properly organized domestic satellite system the chance to contribute to educational television's two great problems: lack of regional and national interconnections, and lack of money for first-rate programming. Thus, the Foundation has proposed the authorization of Broadcasters' Nonprofit Satellite Corporation (BNSC), a national nonprofit corporation authorized by the Commission to establish communications-satellite facilities for the transmission of commercial and non-commercial television and radio broadcasting. We have suggested that BNSC be authorized to provide free service for educational television, to generate funds for educational television programming, and to turn those funds over to a fund disbursing organization.*

---

* The Foundation's comments on program fund disbursement, in Vol. I, p. 59, of its Submission of December 12, 1966, were brief:

> "We see at least three sources of funds for non-commercial programming: excess revenues generated by the operation of the satellite system, general philanthropic support, and tax revenues.
>
> "Noncommercial programs now originate primarily with local ETV stations and NET. Substantial increases in program funds would enable the resources of commercial networks, stations, and independent producers to be tapped. It would permit new sources of talent to be employed in newly established local, state, and regional programming centers, and permit the establishment of television centers for the analysis of public affairs and events of national and regional importance. In short, with increased funds, noncommercial programming would gain in diversity and plurality of sources. The organization of fund disbursement is a question within the province of the Carnegie Commission; we look forward to its recommendations."

In our view the Carnegie Report, the President's Message, and S.1160 have given new force to the Foundation's proposals. The authorization which the Foundation requests would most efficiently

- provide without cost the necessary regional and national interconnections and
- avoid the problems of exclusive reliance on government financing by generating independent funds for non-commercial programming.

II. THE RELATIONSHIP BETWEEN THE FORD PROPOSALS AND THE CARNEGIE REPORT

The Ford Foundation proposals and the recommendations of the Carnegie Commission are united in their view that educational television has unlimited potential to deepen the awareness and understanding of the American people and to raise the quality of American life; that the prime source of the required funds must be the federal government; that new institutions must be created to direct and manage this developing resource, including a nonprofit corporation to receive and disburse funds for educational television; and that such institutions must be independent of the normal processes of repeated review, authorization, appropriation, and other aspects of control by the Executive or the Congress.

The Carnegie Commission and the President have proposed the establishment of a Corporation for Public Television (CPTV). The Foundation strongly endorses that proposal. The Foundation has further proposed that a Broadcasters' Nonprofit Satellite Corporation (BNSC) be established as a powerful complement to

CPTV, providing it with free interconnection for local stations via satellite and with a supplementary income that will help not only to assure independence for educational television but nurture a close working relationship between the commercial and non-commercial television and radio industries. BNSC could operate either as a specialized common carrier or as a cooperative controlled by its commercial, non-commercial and instructional users.*

The cost of the total service, including free interconnection for educational and instructional television, would be far less than the present network costs of the three commercial networks. The Foundation asks only that a portion of the savings, to be agreed jointly between commercial and non-commercial users, be dedicated to educational television through CPTV.

We see CPTV and BNSC operating together in the following manner:

1. Structure.

CPTV would receive and disburse funds for programming and provide a focal point for the national direction of activities relating to public television. Although the bulk of CPTV's funds would come from federal taxes, it would be authorized to receive funds from other sources. BNSC would provide CPTV with independent funds and with regional and national interconnection for local stations without charge.

---

* See Part II of the Foundation's Supplemental Legal Brief for a detailed discussion of this point.

2. Funding.

That the bulk of the money for non-commercial programming must come from federal taxes is agreed. The open issues are the source of the government funds, the manner of their dedication, and the need for independent private revenues and, on these issues, the Foundation and the Carnegie Commission have the same concerns and objectives.

The Foundation has invited attention to several ways of financing non-commercial programming in a paper prepared by Joseph Pechman and reprinted in the Foundation's December Submission. The Carnegie Commission recommends an excise tax on television sets. The President has said that in 1968 he will make recommendations for the long-range financing of the Corporation. We see no need in this proceeding to deal further with the matter of the source of funds.

Ford and Carnegie are in full agreement that whatever funding is provided from federal sources should be independent of the normal processes of authorization and appropriation. We strongly endorse the Carnegie proposal for a trust fund. Indeed, we believe that the Congress itself will prefer financing through a trust fund or its equivalent in order to avoid even the appearance of governmental control over CPTV.

Finally, Carnegie and Ford are also agreed that CPTV should not be forced to rely exclusively on government financing. The Carnegie Commission recommended an endowment of "no less than $25 million" to assure independence. At a rate of return of 5%, an endowment of $25 million would provide annual income of $1.25 million or slightly more than 1% of CPTV's estimated annual expenditures of $100 million.

We believe CPTV requires more substantial funds from private sources. The excess revenues generated by BNSC could contribute annual income to CPTV in the vicinity of $20 million. To achieve this level of income from an endowment, funds on the order of $400 million would be needed, more than the endowment of all but two universities.

Table 8 of a study entitled "Costs of a Nationwide Educational Television System" prepared for the Carnegie Commission by Arthur D. Little, Inc., offers (see Bantam ed., p. 161) an estimate of both operating and capital costs. Programming is of course the largest item of operating costs. For the years 1968-1971 the "average" cost of both national and local programs to be financed by CPTV is estimated at $31 million; for the period 1972-1980 this total is increased to $62 million; for the "long run," national and local programming costs per year are estimated at $74 million.

It is important to understand that the income from BNSC could contribute approximately two-thirds of the total programming costs in the near-term period and a very considerable fraction in the intermediate and long-run periods; over the years, revenues will increase because of increased traffic, and costs will be sharply reduced.* The dollar contribution to programming will in time thus be substantially increased. We again emphasize that programming funds are the most sensitive to political control and that the financial contribution of BNSC will be in exactly this vital area.

---

* See Comsat's Technical Submission, December 16, 1966, pp. 37-39.

In sum, we agree with Carnegie that CPTV should have outside financial support, and we believe that a major source of such support should be the excess income generated by BNSC.

3. Networking, Local Stations, and Free Rates.

The Ford Foundation began the current discussion of educational television with the satellite because satellite communication was the subject of the Commission's Notice of Inquiry a year ago. Before that the Foundation had been concerned with educational television for years and in the past decade had contributed to it a total of approximately $120 million. The Foundation therefore called the Commission's attention to the proposed regional and national interconnection via the satellite and to the potential financial contribution that the satellite could make to public television through cost savings.

The Carnegie Commission, with its mandate "to conduct a broadly conceived study of educational television," and to "focus its attention principally although not exclusively on community-owned channels" correctly emphasized the fundamental role of the local station.

But the Carnegie Report explicitly notes that:

> "The need for live networking capability is as great for public television as for commercial television. It is likely that Public Television will seek instantaneous coverage of

> important events with more freedom than commercial television, for Public Television can make this decision entirely upon the significance of the event, where commercial television must weigh the event carefully against the disruption of its ordinary fixed schedules and consequent economic loss. Even for Public Television, the occasions when the system goes 'live' may be rare. When they occur, however, they can become not only the best use of television, but the most exciting and the most rewarding. Each station should have the opportunity of going 'live' when the occasion warrants." (Bantam ed., p. 54)

If there is any difference between Ford and Carnegie on the subject of interconnection, it is one of emphasis concerning the uses to which interconnection will be put. The Carnegie Report sees interconnection as a means of distributing program materials as well as an opportunity for live networking, and suggests that such distribution may be the dominant use. The Ford Foundation believes that the occasions for live networking will be more numerous than the Carnegie Commission suggests. We do not, however, believe that the difference is of current importance because we are agreed that interconnection is necessary and that experience will be the best teacher of the use that should be made of it.

Much more important than these differences of emphasis is another issue on which the Ford Foundation and Carnegie entirely agree -- the absolute need to avoid centralized control over the apparatus of educational television. In our view, and in that of the Carnegie Commission, it is a fundamental principle that the basic element in a nationwide system of public television must be the local station. At best, national programming is a supplement to local programming, presenting issues that should be treated nationally and programs that cannot be funded locally. National programs will give local stations additional options, greater freedom, but the local station will always decide what national programs to show, and when. All that national or regional production centers -- or satellites -- can do is to give the local station a richer fare from which to choose the local diet.

III. THE PRESIDENT'S MESSAGE AND S.1160

The President's Message and S.1160 recognize the urgent need to improve the quality of public television now. They isolate what can be done immediately, are designed to accomplish it, and identify the issues that need further study.

First, the President's Message recommends creation of "a corporation for public television authorized to provide support to non-commercial television and radio." "That corporation,"says the President, "must be absolutely free from any federal government interference over programming." He asks that its 15-man board of directors, to be appointed by him and confirmed by the Senate, include "American leaders in education, communications, and the creative arts." Title II of S.1160 would create such a corporation as a nonprofit institution "which will not be an agency or establishment of the United States Government."

Second, the President's Message calls for an appropriation of $10.5 million for fiscal 1968 for the Educational Television Facilities Act. Title I of S.1160 authorizes the appropriations, extends the Act to fiscal 1973, and amends it to include non-commercial radio as well as television.

Third, the President's Message recommends that the Secretary of Health, Education, and Welfare be authorized "to launch a major study of the value and the promise of instructional television, which is being used more and more widely in our classroom, but whose potential has not been fully developed." Title III of S.1160 would authorize such a study with an appropriation of $500,000.

The Foundation endorses these proposals.

The President's Message, as it would be implemented by S.1160, and the Foundation's proposals, are related in the following ways.

1. Structure

CPTV would be established as an independent nonprofit corporation. S.1160 would authorize CPTV to procure interconnection facilities from BNSC and to receive the excess funds generated by it.

2. Funding

The President recommends, and S.1160 would authorize, an appropriation of $9 million from general tax revenues for CPTV for fiscal 1968. The President adds that in 1968 he will make further proposals for the Corporation's long-term financing but says that the Corporation should "be authorized to accept funds from other sources, public and private." S.1160 would confer that authority on CPTV.

The Foundation emphasizes the special contribution that the communications satellite can make to the funding of non-commercial television. In significant degree, those funds will relieve CPTV in its most sensitive area -- programming --

of what otherwise would be almost total reliance on tax or other public revenues. No alternative source of comparable private funds has been suggested.

3. Networking, Local Stations, and Free Rates

In his January 10 State of the Union Message, the President said "we should insist that the public interest be fully served through the public's airways." The President repeated this statement in his February 28 Message, together with a directive to CPTV, as one of its first tasks, "to study the practicality and the economic advantages of using communications satellites to establish an educational television and radio network."

S.1160 would specifically authorize the corporation

> to arrange, by grant or contract with appropriate public or non-profit public agencies, organizations, or institutions, for interconnection facilities suitable for distribution and transmission of educational television or radio programs to non-commercial educational broadcast stations.*

"Interconnection" is defined to include communications satellite as well as microwave and other facilities.

BNSC would meet the requisite qualifications, and would be the logical source of interconnection facilities for CPTV. Indeed, since the bill would preclude CPTV from owning or operating "any television or radio broadcast station, system, or network, or interconnection or program production facility," CPTV could not itself operate such facilities. Commercial common carriers are not "public or nonprofit" agencies under the provisions of the bill quoted above.

---

* The bill would also authorize the corporation to "assist in the establishment and development of a system of interconnection" and to "assist in the establishment and development of one or more systems of noncommercial educational television or radio broadcast stations throughout the United States."

The President stated that the formulation of long range policies concerning the future of satellite communications "requires the most detailed and comprehensive study by the Executive Branch and the Congress." The Foundation shares this view and will be prepared, whenever appropriate, to refine and reformulate its proposals. Other solutions may emerge. BNSC may not be the only or even the best way to provide interconnections for public and instructional television. As of the present time, however, no other proposal by any party in this proceeding serves the public interest as well. BNSC is not only consistent with the proposals and recommendations of the President, the Carnegie Commission,and S.1160 but is uniquely designed to assist and complement CPTV.

Finally, S.1160 makes clear that no existing law shall be construed to prevent communications common carriers from offering free or reduced rates for public and instructional television. The Foundation believes that the Commission already has ample authority to authorize such rates (see Vol. II, Supplemental Legal Brief, Part II, pp. 18-40),but S.1160 would remove any justification for further debate.

IV. A NATIONAL TEST SATELLITE PROGRAM

To assist CPTV in its study of communications satellites, the President directed the Administrator of NASA and the Secretary of Health, Education, and

Welfare "to conduct experiments on the requirements for such a system, and for instructional television, in cooperation with other interested agencies of the government and the private sector."

The Foundation endorses the President's proposed test program (see Vol. I, Part 4 of the Foundation's December Submission) and urges that the experiments not only test the use of communications satellites for an educational television and radio network, but also seek to measure interference within the allocated frequencies.

We firmly believe that NASA should be designated program manager to conduct the test program although in cooperation with HEW and other federal agencies (including FCC, OTM, DOD, and the National Bureau of Standards of the Department of Commerce) and all interested private parties including the carriers, the commercial networks, commercial and non-commercial stations, Comsat, the satellite system manufacturers, and the private foundations concerned with public and instructional broadcasting.

NASA has demonstrated its technical and managerial capacity; it has no interest in the ultimate management or ownership role; it occupies a central place in the communications space program; its participation would help dramatize for the nation the enormous benefits which are the promise of that program. Equally important, if NASA is designated, the problem of obtaining launch facilities will be simplified; the problem of securing FCC approval of earth stations -- and of meeting objections by others -- will be minimized; and the problem of funding will be reduced.

We believe it would be unwise, at this stage, to authorize either AT&T or Comsat or any newly-formed entity, to manage this program; such an authorization would inevitably be regarded as anticipating the Commission's final decision. Assurances could of course be obtained that all property rights would be transferred on order of the Commission after the test is completed, but if a potentially interested party were authorized, friction and delays would almost certainly result from continuing debates over the policies to be formulated and the amounts to be paid, and by attempts to organize support for preferred positions.

We see no serious problem in financing the test program through NASA. Although considerable capital expenditures may be required (for ground environment, satellites and launch costs) most of these costs should be recaptured from the applicant eventually authorized to operate the domestic satellite system. The FCC could require reimbursement to NASA of the test costs as a condition of any subsequent authorization. Moreover, even the initial outlay for the test program need not be borne entirely by NASA; arrangements for cost sharing could be made in advance among the private and governmental participants in the program.

Not all the parties to this proceeding are equally interested in the rapid adaptation of the communications satellite to domestic uses. Except for those of us who seek a broadcast satellite service, Comsat is almost alone in its desire to move forward with a domestic satellite system as quickly as possible, but even Comsat must be sensitive to the interests of the carriers. The carriers, including AT&T, are understandably concerned to insure the most economic use of their existing microwave and other ground facilities and are naturally inclined to relegate the satellite to a supplementary role. OTM (not a party) is studying the rapidly increasing demand on a limited spectrum and may be hesitant to endorse the use of the satellite when alternative ground facilities are currently available. The President, however, recognized the existence of an immediate and urgent need and, as a matter of priority, directed the Corporation "to study the practicability and the economic advantages of using communications satellites to establish an educational television and radio network." He further directed that NASA and HEW "conduct experiments on the requirements for such a system, and for instructional television" in cooperation with other interested government agencies and private parties (underscoring supplied).

Speed is essential and delays resulting from extended interference and frequency spectrum studies should be avoided. The record already shows, we believe, that the interference problem is wholly manageable and at this stage cannot fairly be regarded as a justification for delay. A frequency study may be of great value for the long run but, as pointed out in Part 3, Volume III, of the December 12 Submission, adequate frequencies are already allocated to communications-satellite services for the next decade. This period of time is sufficient to justify action now even though in the future spectrum allocations may have to be altered to meet increased demands.

The Foundation is prepared to consider how it can best contribute to such experiments, particularly when there is a need for

- training personnel in non-commercial networking operations through the satellite,
- training teachers and educational administrators in the more effective use of instructional television, and
- making available programs for both non-commercial and instructional television.

The Foundation has appropriated $10 million for public television networking demonstrations and experiments, the most important of which will be a weekly program, to begin in the fall of 1967, tentatively called the "Sunday Night Experiment." This program will be offered through NET with the cooperation of scholars from universities throughout the country. Preliminary inquiries reveal a lively interest among ETV stations in the forthcoming interconnected demonstration. The weekly program would provide an ideal means to test communications satellites for public television, and it is the hope of the Foundation, after the test satellite experiment is begun, that all or part of the "Sunday Night Experiment" will be transmitted via communications satellites. The Foundation is also considering possible broadcasting experiments for instructional television.

V. OTHER PUBLIC INTEREST ISSUES

The specific recommendations in Section VI, below, are offered in support of the Foundation's primary interest in expanding and improving public and instructional television.

Implicit in this proceeding, however, are equally large questions of public policy which are collateral to the educational interests of the Foundation yet which must be resolved by the Executive Branch, the Congress, and the Commission. Because of its conviction that satellite technology should have the most rapid possible development, the Foundation addressed aspects of these issues in its December 12 Submission, both in Volume I, pp. 15-26 and in Volume II, pp. 28-30 . Columbia Broadcasting System, Inc. dealt with these matters in its Supplemental and Reply Comments, December 15, 1966, pp. 3-12. The Foundation shares the view of CBS that the full utilization of satellite capabilities would best be assured by encouraging the development of competitive domestic satellite communications systems and that the establishment of a monopoly would raise serious public interest issues.

The Foundation has commented on three such public interest issues:

First, whether Comsat's monopoly in the international sphere should be extended to domestic service, giving that company an unprecedented control over the development of an emerging technology.

Second, whether the undertaking of domestic service by Comsat would be consistent with its international obligations.

Third, whether what Comsat describes as "economies of scale" overcome other considerations of domestic and international policy.

1. Competition v. Monopoly

Comsat by law is the chosen instrument of the United States for international communication by satellite. Under the Intelsat agreements Comsat is not only the U. S. participant in a global satellite system but the dominant owner and manager of that system. To add to Comsat's authority the exclusive franchise for domestic communications-satellite systems, as proposed by Comsat, would give the corporation a world monopoly. One entity would provide all communications-satellite services. One company would be responsible for developing all satellite technology. One customer would procure all satellite equipment.

A monopoly of this sort would be unprecedented, even for public utilities. Although AT&T is often considered a monopoly, there are many independent telephone companies in the United States, including several of considerable size, and many more in foreign countries. The problem is made more acute by Comsat's statute under which six of Comsat's 15 directors must represent common carriers; these six directors are not free to concentrate on the development of communications satellites -- they must also be aware of, and sensitive to, the large common carrier investment in microwave and other land facilities.

This fundamental belief in the value of competition should not in any sense be understood as critical of Comsat. We do not question Comsat's desire to develop and nurture multiple sources of supply or otherwise to carry out fully the procurement provisions of the law under which it operates. The difficulty arises from the need to reconcile Comsat's role as a conventional commercial utility with sole custodianship (which Comsat proposes) of a government-developed technology that must be further developed if the public interest is to be fully served.

Comsat's plan to construct a laboratory facility of its own may help to identify further the central dilemma. Comsat is entering the field of research and development and this decision is doubtless sound. Comsat engineers will soon begin to intensify their study of space communications technology and move into the improvement and design of satellites and related equipment. Ties with certain suppliers will become closer; because Comsat will be their only customer, the position of these suppliers will gradually be weakened and they will find themselves relegated to a subordinate role. Other suppliers will drop out of the competition. In time, Comsat engineers are bound to develop vested interests in their own ideas and design. The end result of a single-commercial-buyer system is almost certain to be a marked reduction in the total technological effort and in the kind of competition which would best serve to develop this enormously important technology.

We assume without argument that Comsat will wish to avoid these results and will make every effort to do so. But the question is whether the Commission and Congress, while there is still an opportunity for choice, should establish a system whose dynamics will tend to have consequences of this kind. We doubt that the public interest would be served by authorizing Comsat, a privately-owned company, operated for profit, in which carriers with dominantly land-based interests have a powerful voice, to provide satellite services, on a monopoly basis, for all television, telephone,and data and record transmission.

BNSC assumes voluntary participation on a contractual basis, for defined periods of time, by commercial television and radio networks. It does not seek a monopoly for television and radio transmission. The Foundation believes that the Commission should be free to authorize competing or other satellite service whenever the Commission concludes that additional service is warranted. We recognize that two satellite systems will probably not be authorized , at the outset, to provide television and radio service. But we believe that BNSC should operate with the knowledge that its commercial partners will be free to seek services elsewhere after each period of their commitment is ended, and that the Commission will be free to respond to their requests.

2. Conflicts of Interest

We discussed briefly in the August 1 Submission and at greater length in the Submission of December 12 the conflicts that might arise if Comsat were authorized to provide domestic service, in view of its obligations under Intelsat. The timing and simultaneous filing of submissions has not yet enabled Comsat to respond in detail to this consideration. Indeed, it is not yet clear whether the service Comsat proposes to provide would be part of Intelsat or independent of it. Either alternative is troublesome.

If the service is independent of Intelsat, there may well be conflicts with Comsat's obligations under the 1964 Intergovernmental and Special Agreements. Apart from the possible diversion of energies and resources from its international obligations, the operation of a domestic system would require Comsat to determine whether business should be channeled to an international system, in which Comsat now has a 53.8% ownership interest, or to a domestic system in which private stockholders have a claim to 100% of the earnings.

At this stage we do not regard the subordination of all domestic communications satellite systems to a global system as realistic; it is predictable that some countries will wish to maintain the independence and individual integrity of their domestic broadcast and communications systems. Historically, the United States Congress has been exceedingly careful to immunize our domestic system from foreign control, a care manifested in the 1962 Act itself. These issues will undoubtedly be considered in formulating the U. S. position for the 1969 Conference that will establish definitive arrangements for an international global system. Any domestic satellite service should be techaically compatible with the global system, but we suggest that common ownership arrangements may be both improper and unwise.

Finally, in a report released just a year ago, designed to bring some order into the nation's commercial overseas telecommunication system, an Intra-Governmental Committee on International Communications* recommended legislation that would permit, inter alia, the merger into one company of all overseas transmission facilities now owned by the record carriers, the voice carriers, and Comsat. With respect to this alternative, the Committee said

---

* See Reply Legal Brief, Volume II, Foundation Submission of December 12, 1966, p. 12.

> "This restructuring would offer most of the economies provided by the other alternatives, would probably offer the strongest R&D support, and would provide the strongest position for negotiation with foreign administrations." Report and Recommendations to Senate and House Commerce Committees, p. 29.

The Report was signed by representatives of FCC, the Office of Telecommunications Management, and the Departments of State, Defense, and Justice.

This solution to the problems which the Intra-Governmental Committee addressed in its Report might well be precluded if Comsat were now given a domestic monopoly over communications by satellites.

3. Economies of Scale

Comsat contends that a single multipurpose satellite system, with a monopoly of domestic service, is more economical than separate systems. The argument is superficially appealing, butthe reality seems to be that the economies of scale envisaged by Comsat would amount to approximately 9% of the cost of the satellite system, as demonstrated in the Foundation's Submission of December 12, Vol. I, pp. 19-26. With a minimum of foresight in planning and cooperation among domestic systems these so-called economies would be virtually eliminated. More important, Comsat fails to acknowledge offsetting advantages in separate systems, including the economies of specialization. To the extent that economies of scale do exist, therefore, they must be weighed against our traditional policy of encouraging competition, against the economies of specialization, against the inequity of disregarding the heavy taxpayers' investment in space, and against the compelling needs of non-commercial television.

Another alternative likewise awaits comment by Comsat. In its December 12 Submission the Foundation pointed out that whatever the interplay between the economies of scale and the economies of specialization, this issue bears on how physical facilities are used, not on how they are owned and organized. This Commission has itself found means of accomodating multi-ownership interests where common services were to be provided (American Telephone and Telegraph Company, et al, 37 F.C.C. 1151/1964/). In that proceeding (TAT-4), the Commission ordered the ownership interest of a transatlantic cable apportioned among the carriers "in accordance with their current and reasonably foreseeable traffic requirements" (37 F.C.C. at 1157), a formula that appears equally appropriate here, as between BNSC and other entities.

If there are substantial cost advantages in joint use of some part of the facilities of a communications satellite system -- on the ground or in space -- there is no reason why common ownership arrangements cannot be authorized.

VI. Recommendations

The Foundation recommends that the Commission issue a Declaration of Policy that includes the following points:

1. The Commission has the power under the 1934 Act to authorize private non-common and common carriers to construct and operate domestic communications-satellite facilities for non-governmental purposes.

2. The Commission is not precluded from exercising its power either by the Communications Satellite Act of 1962 or by the 1964 International Communications Satellite Agreements.

3. The Commission will receive and consider as a matter of priority applications for the use of satellites and the necessary ground environment in support of a national test satellite program.

4. The Commission will receive and consider applications to provide television and radio distribution by satellite for commercial and non-commercial users, either as a non-common carrier cooperative or as a specialized common carrier.

5. The Commission will upon application institute rule-making proceedings to make such changes in its rules as may be necessary to permit approval of the applications referred to in paragraph 3.

6. The Commission will delay for one year final authorization of any domestic satellite service to permit the President to formulate additional recommendations and to permit adequate Congressional consideration of the entire matter.

The Commission's views on the scope of its power, on the proper and wise organization of a domestic communications-satellite system, on the relationships between communications satellites and public television and radio, and on the merits of the several pending proposals will be important in the coming months. A Declaration of Policy would provide the Congress with a definite statement of the Commission's considered judgment, and would make clear that the Commission is prepared to act in a defined way if the Congress chooses not to direct a different course.

BNSC, as the Foundation has repeatedly emphasized, would be a consensual enterprise. We believe that satellite communications offer the commercial networks an opportunity to provide free service for instructional and non-commercial television, and supplementary funds for programming, without harm to their own legitimate interests. This the networks could do while retaining an agreed portion of the savings of communications satellites -- perhaps, indeed, a larger portion of the savings than would be passed on to them by common carriers. We further believe that a cooperative undertaking by commercial and non-commercial broadcasters would benefit both.

We know that the step we are asking the commercial networks to take has far-reaching economic, technological, and social consequences. We fully understand their desire to consider that step carefully. ABC has indicated interest in and support for the concept of BNSC. CBS has emphasized the need for competition and has indicated strong support for the Carnegie Commission's conclusion that CPTV should have a supplementary source of income from an endowment fund. NBC has expressed whole-hearted support for public television but has so far reserved its position on BNSC.

On further reflection, and as the contours of the project are more carefully defined, we believe the networks may well decide to join with BNSC in the cooperative undertaking proposed by the Foundation. A Declaration of Policy along the lines we have proposed would give the networks a further opportunity to assess their own interests and their long-range relationship with non-commercial and instructional television. If the networks should conclude that BNSC is consistent with their interests, the Declaration of Policy would have served as the foundation for a remarkable forward step.

SUMMARY DESCRIPTIONS
OF
VARIOUS PROPOSALS FOR DOMESTIC SATELLITE SYSTEMS

Prepared by
Educational Television Stations
a division of
National Association of Educational Broadcasters

for
Second National Conference on the
Long-Range Financing of Educational Television Stations
March 5-7, 1967

Introduction

The purpose of this report is to provide essential information on the nature and potential of the communications satellite. It includes the following:

a. Principle of satellite operations

b. General system characteristics

c. Summary descriptions

Comsat System
AT&T System
Broadcasters' Non-Profit Satellite System
(Ford Foundation)

d. Estimates of potential savings

Principle of Satellite Operations

The communications satellite serves essentially as a signal repeater mounted on a very high tower, thus providing coverage over a very wide area. It may be designed either as a multipurpose satellite serving a wide variety of communications needs or as a special purpose satellite dedicated to a single class of needs (say, the distribution of TV programs).

When a satellite is used to distribute TV, the program originating in a designated studio is sent via communication links to a nearby earth terminal from which it is beamed up to the satellite. The satellite relays the program to all the earth terminals located within a large region (possibly nationwide). Each of the earth terminals receiving the program sends the program signals onward via communication links to broadcast stations in its vicinity. The stations may then broadcast the program immediately or tape the program for delayed broadcast.

General System Characteristics

A communications-satellite system generally consists of two or more satellites, a number of earth terminals of various kinds, communications links to connect the earth terminals to the users of the system, and one or more centers from which operations are controlled. The satellites are placed at an altitude of about 22,000 miles above the earth's equator, and at points from which they can "see" all the earth terminals being served. At this altitude, the satellites have a 24-hour period of revolution. If launched so as to revolve in the plane of the equator and in the same direction as the earth, they will appear to stand stationary in the sky. The advantage of the stationary satellite is that the antennas of the earth terminals can be fixed rather than movable, thus simplifying their construction and lowering their cost.

An earth terminal will generally serve all of the users in a given geographic area. It consists of one or more large antennas (upward of 25 feet in diameter) plus the associated electronics enabling it to receive as many channels as its local users may require. If it serves as a point of program origination, it will also have a number of transmitters. The earth terminals must be so located as to avoid mutual interference between the satellite service and the microwave relays.

Reliability of service and quality of transmission via the satellite are expected to be at least as good as via cables or microwave relays.

Summary Descriptions

Proposed systems for interconnection by satellite are summarized on the following pages:

Comsat System
AT&T System
Broadcasters' Non-Profit Satellite System
(Ford Foundation)

COMSAT CORPORATION SYSTEM (1970 Model)

Total Channel Capacity	48 TV or 84,000 point-to-point message or 38,000 multipoint message

Typical Services Provided

TV Channels	30
Telephone Channels	10,000

System Components

Satellites	4, each with a capacity of 12 channels of color TV or 21,000 channels for point-to-point messages or 9,600 multipoint messages.
Earth Terminals:	
TV Distribution	161, each capable of receiving on several channels. Of these, 3 are also capable of transmitting. Each has a 25/32-foot antenna.
Multipurpose	18, of which 6 are used for point-to-point and multipoint message traffic and TV origination, and 12 are used for multipoint message traffic and TV distribution. The former terminals have 85-foot antennas; the latter, 42-foot antennas.
Communication Links	connecting earth terminals to broadcasting stations and ITV facilities.
Operations Control Centers	2, each capable of providing the switching and testing functions for network operations.

For its advanced system (1978 model), Comsat would use 4 satellites, each having a capacity of 24 TV or 19,200 multipoint message channels (4 to 6 GHz band) and 40 to 60 TV or 60,000 to 90,000 multipoint message channels (band over 10 GHz). The number of earth terminals for TV distribution would be increased to 221; the number for multipurpose uses to 30.

AT&T SYSTEM (Early 1970's)

Total Channel Capacity	(1969 - 2 satellites)	24 TV or 19,200 Telephone
	(1970 - 3 satellites)	36 TV or 28,800 Telephone (two-way)

	1969	1970
Full-time TV Channels	8	12
Occasional TV Channels (also used for reserve and instructional purposes)	12	12
Telephone Channels	3,200	9,600

System Components

Satellites	2, initially identical in characteristics to Comsat 1970 model.
Earth Terminals:	
TV Distribution	73, each capable of receiving on several channels. Each has a 25-foot antenna. None of these would be located in the Northeast (a region extending from Illinois and Wisconsin around to Maine). Broadcasting stations in this region would be served by cable and microwave relays.
Multipurpose	2, in 1969 (Los Angeles, New York City), 2 more in 1970 (Chicago and second in New York City), each used for telephone traffic and TV origination. Each has an 85-foot antenna.
Mobile	Not indicated in proposal.
Communication Links	connecting earth terminals to broadcasting stations and ITV facilities.
Operations Control Centers	Not indicated in proposal.

For its advanced system (first launchings in 1972), AT&T would use 4 satellites, each having a capacity for 12 TV channels and about 30,000 two-way channels. The number of earth terminals for TV distribution would be 73 (as before); the number for multipurpose uses would be increased to 26 (by 1976).

BROADCASTERS' NON-PROFIT SATELLITE SYSTEM

(BNS-3, Early 1970's)

Proposed by Ford Foundation

Total Channel Capacity	48 TV
Typical Services Provided	
Full-time TV Channels	28
Occasional TV Channels (also used for reserve and instructional purposes)	20

System Components

Satellites	2, each with a capacity of 24 channels of color TV.
Earth Terminals:	
TV Distribution:	
Major	4, each capable of receiving on 18 channels and transmitting on 21. Each terminal has a 35-foot antenna.
Secondary	219, each capable of receiving on 6 channels. Of these, 46 are also capable of transmitting on 3 channels. Each terminal has a 25-foot antenna.
Mobile	10, each capable of transmitting on 1 channel and receiving voice instructions. Each terminal has a 15-foot antenna.
Communication Links	connecting earth terminals to broadcasting stations and ITV facilities.
Operations Control Centers	2, each capable of providing the switching and testing functions for network operations.

For its expanded service (late 1970's) the Broadcasters' Non-Profit Satellite System would use 3 satellites, each with a capacity of 24 TV channels.

Estimates of Potential Savings

A number of estimates have been made comparing the costs of a domestic satellite system with the charges of AT&T for cables or microwave relays. The estimates are useful to provide only an approximately comparison since they relate to different kinds of systems and are based on different costing methods. The results are summarized in the following four instances:

a. Comsat Multipurpose Satellite System

Although Comsat has presented no estimates of savings from satellite operations in its August and December 1966 submissions to the FCC, it does expect to achieve significant savings, both in its 1970 system and (even greater) in its more advanced 1978 system.

b. AT&T Multipurpose Satellite System (AT&T Proposal, December 16, 1966)

AT&T estimated that in 1969 the total annual savings would amount to $20 millions, of which $19 millions would be related to TV distribution and $1 million to telephone. By 1980 it estimates the total annual savings to be $41 millions, of which $19 millions would be related to TV distribution and $22 millions to telephone.

c. Broadcasters' Non-Profit Satellite System for TV Distribution (Ford Foundation Comments, December 12, 1966)

Annual Costs (in millions)	
Telephone Company charges	$60.0*
Satellite System costs	28.8
Total Savings	$31.2

* Assumes charges to NBC, CBS, ABC and Overmyer Networks, as well as to industrial and governmental users, but no charges to ETV. Estimate is for 1970 operations.

Estimates of Potential Savings (cont'd)

d. NBC Study of TV Distribution System to be used by NBC, CBS, and ABC (Presented at Comsat Seminar, April 12, 1966)

Annual Costs (in millions)	
Telephone Company charges	$45.0*
Satellite System costs	19.5
Total Savings	$25.5
Savings per Network	8.5

---

* Assumes that each Network will continue to use Telephone Company facilities for special pick-ups and messages services, for which it will be charged $3,250,000 annually. Estimate is for current operations (1965-66).

HAMMETT & EDISON
Consulting Radio Engineers

AN EVALUATION OF THE TECHNICAL AND ECONOMIC COMMENTS OF THE FORD FOUNDATION, COMSAT, AND AT&T IN FCC DOCKET NO. 16495

The firm of Hammett & Edison, Consulting Radio Engineers, San Francisco, has been retained by the Ford Foundation to prepare a comparative evaluation of documents filed in December by various parties in FCC Docket No. 16495. Technical and economic aspects of the comments of the Ford Foundation, Comsat, and AT&T are discussed herein.

General

As a result of our studies, we conclude that all parties agree that the domestic distribution of television by satellite is technically feasible and that there are economic advantages in doing so. AT&T, in Attachment 3 to its comments, estimates that the annual cost of operation of the Ford system would be approximately the same as the charges now paid by broadcasters for the portion of the interstate system which Ford proposes to replace. However, AT&T states in its Attachment 1 that by optimizing the distribution of facilities between space and terrestrial components, it could achieve significant savings. Thus, AT&T concedes the basic point that there is a profit to be made by using satellites to distribute television. From a technical standpoint, all parties have submitted system designs for the distribution of television which are not substantially different from the system proposed in the Ford Foundation document. AT&T discusses advanced systems operating at very high microwave frequencies at some time in the future, pulse code modulation techniques, narrow antenna beam widths, point-to-point transmission, and telephone message service. The fact remains that AT&T also proposes the distribution of televison signals at 4 GHz, as do the Ford Foundation and Comsat. All parties also agree that all, or nearly all, television distribution can be accomplished by satellite without serious interference to or from existing terrestrial microwave facilities.

Estimates of Channel Requirements 1969-1980

Attached is Figure 1 from Comsat's technical submission on which we have shown the AT&T television and telephone requirements projections and the projections which we made last fall at the Ford Foundation's request. There is close correspondence between the AT&T and Comsat projections of message channel usage. Hammett & Edison did not attempt to project this type of usage. With regard to television usage, our predictions are slightly higher than those of Comsat and AT&T for the year 1970; about 30% lower than their predictions for 1975; and 17% lower than Comsat, and 35% lower than AT&T in the year 1980. Our estimates for the 1980 television requirements of commercial and government users are almost identical with AT&T's. We estimate twice as much usage by NET as AT&T, and the estimates for occasional facilities are very close. It appears that the difference arises from the way we totalled our estimates, primarily in our estimate of the extent to which occasional users can share the protection channels. Within the inherent limitations of accuracy for projections leading so far into the future, the estimates of the other parties adequately support the Foundation's suggestion of a two satellite system initially, growing to a three satellite system in approximately five years.

Transmission Requirements

The Ford Foundation document proposes a distribution system having an output signal-to-noise ratio many times better than that proposed by Comsat or AT&T and, in fact, better by a considerable factor than that recommended by the CCIR. This excess signal-to-noise ratio could be traded for more channels per satellite. Based on simple theory, the number of channels in each satellite could be doubled over the number given for BNS-3 and 4 before quality falls below the AT&T target figures. As a practical matter, the factor is probably closer to 1.5 or 1.6, but, nevertheless, it may be possible to increase the system capacity by 50 or 60% at essentially no cost.

Interference with Terrestrial Stations

As is pointed out on page 55, Part 5, of Volume III of the Foundation's comments, it is relatively easy to provide the necessary levels of transmitter power from the earth stations to suppress interfering signals at the satellite receiver. However, as the earth station effective radiated power is increased to achieve this, problems of interference from the earth station to terrestrial common-carrier relay receivers are also increased. Neither AT&T nor Comsat discussed this type of interference in detail. Comsat reached the conclusion that this type of interference could be avoided by coordination, but this would necessarily place restrictions on the locations of satellite earth station transmitters and, thus, might very severely limit the use of mobile stations. The Comsat and AT&T solution was to use the frequencies above 10 GHz for this purpose and thus completely avoid any question of interference with common-carrier facilities. The Foundation pointed out that the restriction to mobile activities is not severe because the mobile transmitter would generally use only one or two frequencies, and these could be chosen for any location to avoid interference with common-carrier facilities in actual operation. In any event, the IBM analysis makes a good case that a suitable BNS transmitting and receiving location can be found with some difficulty in or near any large city, and with very little difficulty near smaller cities.

All three parties discussed, at some length, interference to terrestrial 4 GHz receivers from satellite transmitters. Both Ford and Comsat assert that power flux densities need not be restricted to the level now recommended by the CCIR. AT&T urged that the limits not be relaxed beyond the CCIR Oslo Recommendations. The supporting analyses of all parties are incomplete in one or another respect. First, neither Ford nor Comsat based its analysis on the total interference received from all satellites. Second, Comsat's computer program shows that domestic satellites are unlikely to be positioned where they would radiate into the main beams of terrestrial radio relay receiving stations. Only satellites over the ocean, i. e., in the international service, would be capable of causing interference in this manner. International satellites serve relatively few points. They could make excellent use of the advanced technology that AT&T proposes for the domestic point-to-point service, thus freeing the 4 GHz band for domestic use. Even if international use of the 4 GHz band continues, an optimized international system would be expected to use larger ground terminals than an optimized domestic television system. This would permit the international satellite to be less powerful, smaller, and less expensive to launch than its domestic counterpart. The result in either case is elimination or reduction of the importance of radiation from international satellites. We can thus limit consideration to interference from high-power domestic satellites. The following arguments were developed to provide a straightforward way to deal with this question.

The greatest interference from a satellite to a terrestrial microwave receiver will occur when there is severe attenuation of the desired signal from the terrestrial microwave transmitter because of atmospheric fading. During this period the received signal level is very low, and a substantial fraction of the energy entering the receiver is generated in the input circuits of the receiver itself. This internal noise level can be calculated with fair accuracy for a typical system to be approximately -164 dbw in a 4 kHz bandwidth. CCIR Recommendation 357 specifies the maximum permissible total interference that could be tolerated from all satellites. Although the values vary with the per-cent time, the average is approximately ten per cent as great as that caused by internally generated receiver noise for any particular fraction of the time, or approximately -174 dbw in a 4 kHz bandwidth. The interfering signals from the satellites would be collected by a typical AT&T microwave receiving antenna having an equivalent maximum aperture of approximately five square meters (7 db greater than one square meter). This means that the maximum power flux density received from all satellites cannot exceed a total of -174 dbw - 7 db = -181 dbw per square meter if no discrimination were obtainable through receiving antenna directivity. The Foundation's documents assumed an antenna discrimination factor of 50 db. This was based partially on turntable measurements of typical antennas and partially on the results of Stanford Research Institute experimental measurements of microwave antennas in situ. Comsat demonstrated, using a comprehensive computer program, that there will be no domestic satellites in the main lobe of the terrestrial microwave relay receiving antennas and, thus, only energy arriving through the back and side lobes must be considered. An inspection of the measured pattern of a typical AT&T microwave antenna indicates that the side-lobe response is approximately 40 db below the main lobe and the back-lobe response (in regions more than 90° from the main beam) is greater than 60 db below. We can disregard those satellites radiating into the back lobes of the antenna because of the 20 db lower response in that region. Assuming that the satellites are evenly distributed on the equatorial arc, approximately half of the satellites would be expected to be in the side-lobe region of the average randomly oriented microwave receiver antenna. If we assume that twelve satellites are causing the maximum permissible total interference, each satellite can contribute only one-twelfth of -181 dbw per 4 kHz bandwidth, or approximately -192 dbw per 4 kHz. If the average terrestrial antenna discrimination factor is 40 db, the maximum permissible power flux density received at the earth's surface from each satellite is thus -192 dbw +40 db = -152 dbw per square meter for a 4 kHz bandwidth. This is approximately the same as calculated by AT&T, although our conclusion has been reached by a different method. This power flux density is somewhat higher than that which would be received from the BNS satellites, and much lower than is claimed as a reasonable limit in the IBM analysis. It would not restrict BNS operations in any way, nor would the BNS satellites cause significant interference.

Knowing the difficulties associated with airborne pattern measurements, we tend to discount the SRI results. A more informative approach would be to set up a TD-2 test link, put a simulated satellite transmitter with variable power in an airplane, and see what it takes to cause the level of interference permissible under CCIR Recommendation 357. An expensive satellite test program is not needed to answer this question.

Satellite System Cost

The BNS satellites were expected to be amortized over a five-year period, but the system life was claimed to be ten years. Since three additional launches were included to cover satellite failures and provide a lifetime of ten years for both earth and space segments, we believe that this cost component could be reasonably changed to a ten-year amortization and reduce the total cost by several million dollars per year for either BNS-3 or 4. It is also possible that the modification of satellites to provide more channels, as outlined previously, could provide performance approaching BNS-4 at BNS-3 cost. Combining these two effects, it appears reasonable to expect near BNS-4 performance for approximately $26,000,000 per year.

Cost Crossover - Terrestrial vs Satellite Facilities

A BNS affiliate ground terminal equipped only for reception costs approximately $100,000 to buy in quantity and perhaps $10,000 per year to maintain. Spread over a ten-year lifetime, this results in a total annual cost of slightly more than $20,000 per year, or approximately $2,000 per month. This represents the incremental cost for adding one affiliate receiving station to an existing satellite network. The comparable figures for AT&T service are approximately $1,250 per month for station connection charges alone. Mileage charges are in addition to this and run approximately $57 per month for each mile of circuit length. Use of a satellite channel should, of course, carry with it a share of the cost of the satellite itself. This cost is independent of the distance between the earth stations. Considering the large number of broadcasters sharing each distribution channel, a fair charge for access to one satellite channel would be $2,000 per month. Thus, below 50 miles, terrestrial microwave facilities under existing tariffs are less expensive than a satellite connection. AT&T asserts that microwave service to the northeastern portions of the United States, where stations are relatively close to each other, would be less expensive than satellite service, but this is not borne out by the above. Only in a few cases are station groups as close as 50 miles.

AT&T states that there is a cost crossover for message traffic at 1300 miles, and implies that the situation is similar for television. It stated that slightly different economic criteria were applied to the TV networks. However, it declined to state the TV mileage figure which resulted. As shown above, the 1300-mile crossover does not apply to the distribution of television. Satellites are more economical than terrestrial systems for distributing network programs (as opposed to point-to-point) even over short distances under the present rate structure.

It may be that AT&T talks of a crossover in cost at 1300 miles because this would allow it to serve the densely populated northeastern United States with existing terrestrial facilities on which it can undoubtedly make a good profit with present rates. As explained above, telephone company charges consist of station connection charges and mileage charges. In the Northeast, station connection charges undoubtedly represent a relatively high fraction of total charges, and maintenance is relatively simple because the relay stations are never very far from a town. The situation in the West is the inverse. Stations are far apart and the station connection charges are small compared to the mileage charges. Also, microwave repeater stations in the West are often located in areas which are inaccessible (or at least remote) and, therefore, more expensive to maintain.

As a practical matter, the satellite beam that illuminates the southeastern United States will also illuminate the northeastern United States. Service to this area would not require additional satellites as AT&T claims, but only the addition of receiving terminals and associated short station connection links. Thus, the economic considerations outlined above are applicable. No additional interference would be caused to terrestrial microwave facilities. As AT&T suggests, the problem of coordination between satellite and terrestrial terminal facilities would present some difficulties in the northeastern United States. Nevertheless, the IBM study indicates that such coordination could be achieved without severe penalty to either satellite or terrestrial systems.

Satellite or Terrestrial Backup

AT&T advocates backup terrestrial facilities in case of failure of the satellite network. An extra fifteen-million dollar satellite would provide excellent backup, is probably no more expensive than a nationwide terrestrial backup channel, and is very much more flexible than a terrestrial facility. A single satellite channel could replace any terrestrial microwave circuit, given the existence of terminal facilities, and is not restricted by physical location of repeaters as are terrestrial facilities.

Economics of Multipurpose vs Specialized Systems

The Foundation's arguments in this area are supported to a certain extent by Comsat's Figure 4 of its technical submission. Comsat shows only approximately twelve per cent difference between combined message and television separate services (the BNS approach) and its multiservice approach. These correspond to the 1970 plan, Options B and C respectively, of its Figure 4. We could not find that AT&T made a quantitative comparison of the two approaches.

AT&T's estimates of the capital required to set up a satellite system show substantial variation, depending upon whether it is discussing the Ford Foundation proposal or its own proposal. For example, on page 2 of Attachment 3 of the AT&T comments, it is estimated that the total first cost of the BNS-2 system would be $224.4 million, and the total annual charges would be $36.7 million. This is approximately three times the Foundation's first cost estimate and twice its estimate of annual charges. On page 27 of its Attachment 1, AT&T shows for the television portion of its proposed system a net investment in 1970 of $102 million, which is comparable with the Foundation's estimates for BNS-3. This rises to an investment in 1980 of $170 million. Both estimates are well below the AT&T estimate of $224.4 million for the BNS-1 and 2 systems, although these systems would be markedly less complex than the 1980 system proposed by AT&T. The economies claimed for the multipurpose approach could not reduce the total investments by such a large factor. In fact, the AT&T estimates for the BNS-1 and 2 systems are only slightly less than its estimates of $279 million for the total costs of a multipurpose television and message traffic system for 1975. Using AT&T's component cost list on page 28 of their Attachment 1, we computed the first cost for BNS-3 at approximately $105 million. There are some component parts missing from this list, but, nevertheless, it is far less than the $224.4 million that AT&T estimated for BNS-1 and 2, and is quite close to the Ford Foundation's estimates of approximately $100 million for BNS-3. We have combined AT&T's conservative estimate of savings for a combined satellite-terrestrial system with the arguments of Comsat relative to separate versus multipurpose systems to arrive at a minimum estimate for the potential savings of the BNS system. Even using this estimating technique, it is apparent that the BNS approach would result in a considerable reduction in the cost of relaying domestic television. If AT&T estimates of the annual charges for terrestrial facilities in future years are compared to the Ford Foundation's estimates of satellite costs, it is seen that the total savings could be at least forty-five million dollars in 1980 rather than the nineteen million dollars estimated by AT&T.

It is not clear what fraction of the savings would be passed on to television users by each of the organizations proposed. In Volume I of the Ford Foundation's December comments, Leland Johnson discussed this problem. Mr. Johnson demonstrated that if the savings were spread across all communications users, which is one interpretation of AT&T's comments, the financial benefits to the networks and broadcasters would be small. It would seem to us that the networks would prefer the BNS approach in which they might save a good share of forty-five million dollars while making a contribution toward education and having a voice in the operations of the interconnection system, rather than to save part or even all of nineteen million dollars.

Advanced Systems

We have evaluated AT&T's extended discussion of advanced technology systems and will comment on the technical aspects of these systems. The 1972 model spacecraft has 45 PCM transponders and 12 FM transponders and weighs approximately 3000 pounds. Since the hardware requirements for Ford's 4 GHz wide-area television distribution system and the 18 to 30 GHz point-to-point relay system are so different, the satellite subsystems which these two types of services can share are limited to primarily the power supply and conditioning subsystem and the attitude control subsystem. In combining wide-area and point-to-point functions in one satellite, they would have a spacecraft weight exceeding the capabilities of any operational boosters. It is not clear that such boosters will be available in the 1970's at a reasonable cost as a spin-off from the military or civilian space programs. There is no evidence that AT&T included contingency funds to meet this possibility. Even though AT&T proposes the use of new frequency bands and coding techniques for the point-to-point message and television services, it apparently has not found a better way to distribute television signals throughout the United States than to use the 4 GHz common-carrier band as is also proposed by the Ford Foundation. As AT&T acknowledges, one of the problems of using the 18 and 30 GHz bands is the attenuation which occurs during heavy rainstorms. To circumvent this problem, it proposes to locate transmitting and receiving stations in pairs separated by at least ten miles and linked by suitable terrestrial facilities. In doing so, it has immediately more than doubled the cost of the earth station complex by requiring a second terminal for each affiliate group and by requiring terrestrial facilities to link these two terminals. AT&T did not comment on the fact that microwave interconnection between earth station pairs would also contribute significantly to spectrum congestion. This interconnection would undoubtedly be done at 6 GHz because propagation at higher frequencies would suffer the same attenuation in rainstorms when used for terrestrial facilities as for earth-space transmission. For reliability, the system should be designed so that a rainstorm could not simultaneously affect both terrestrial and space circuits.

AT&T proposes to use the 30 GHz band on the up-link for television distribution signals. These signals would enter the satellites through highly directional antenna beams pointing at predetermined origination centers. The usefulness of the satellites for relaying signals from mobile terminals would be greatly restricted if the satellite could only receive signals from these predetermined areas. Also, any kind of mobile operation in the 30 GHz band would be very difficult because of the requirements for transporting, erecting, and interconnecting pairs of transmitting earth stations to avoid the rainfall attenuation problem.

In summary, our analysis of the AT&T advanced system proposal is that it has bolted a television distribution satellite to a message traffic satellite and discovered that it could not launch the result with an available booster. Furthermore, it has sacrificed the attractive ability of a satellite to pick up transmissions from mobile stations anywhere within the United States by proposing the use of 30 GHz for the up-link frequency.

Conclusions

There is a wealth of material in the documents which we have reviewed, and an analysis thereof could continue almost indefinitely.

The variations in technical detail among the proposals evaluated herein are not of primary importance. Using the best ideas from each proposal, it is clear that a system could be constructed that would provide the service described in the Ford Foundation's comments at a significant saving relative to purely terrestrial systems. The interference studies presented indicate that such a system could operate without causing or suffering excessive interference, but that in congested microwave areas careful study would be required to locate suitable sites.

Hammett & Edison
Consulting Radio Engineers
March 27, 1967

TOTAL ESTIMATED CHANNEL REQUIREMENTS

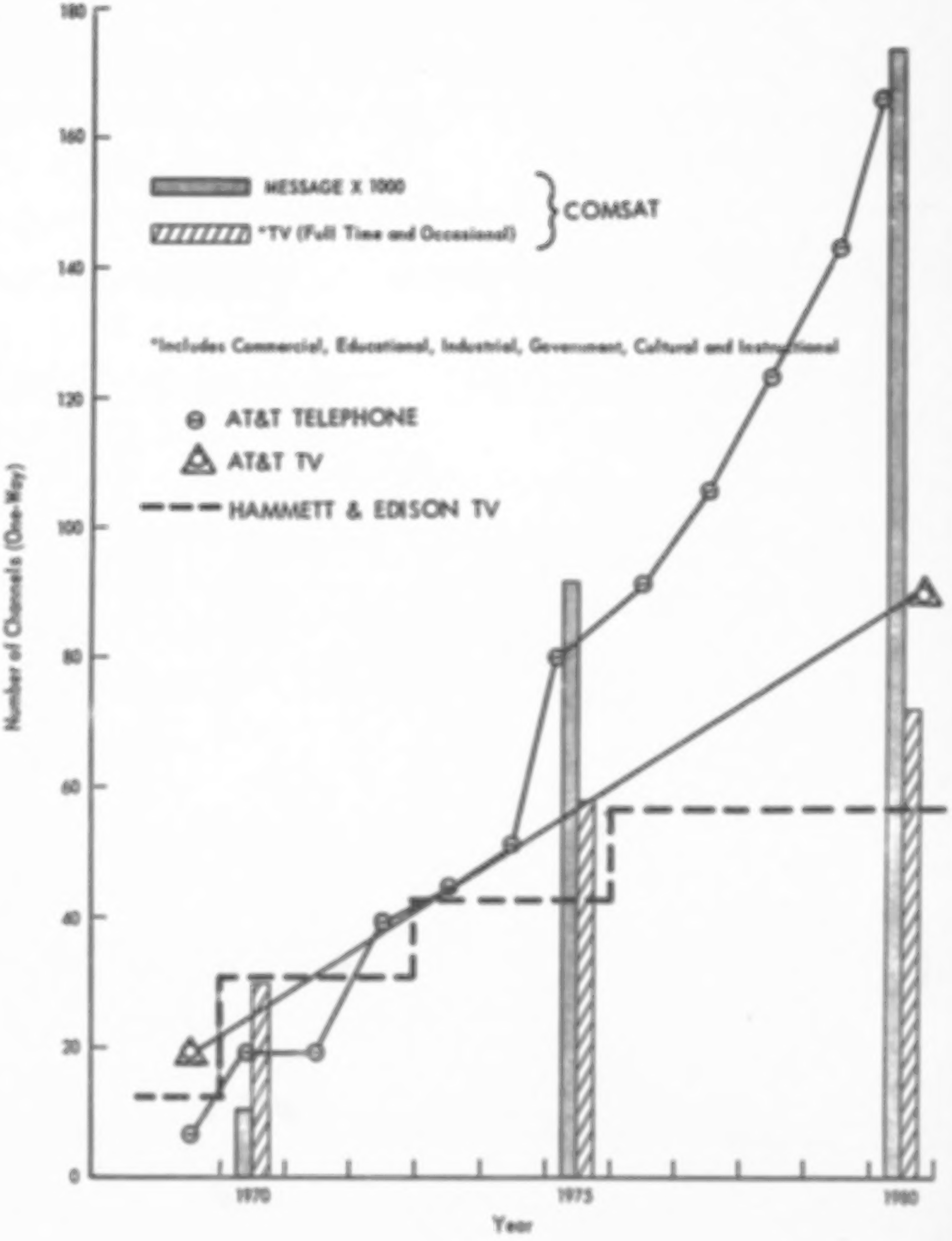

FIGURE 1

Respectfully submitted,

The Ford Foundation

by___________________________________
McGeorge Bundy, President

THE LIBRARY OF
OCT 26 1967
CONTINUING EDUCATION

ED012844

VOLUME II

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D. C. 20554

In the Matter of the	)	
Establishment of domestic communications satellite facilities by non-governmental entities.	)	DOCKET No. 16495

SUPPLEMENTAL LEGAL BRIEF

AND

COMMENTS OF THE FORD FOUNDATION

Ginsburg and Feldman
Washington, D. C.

Attorneys for the
Ford Foundation

April 3, 1967

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

AC000772

VOLUME II

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D. C. 20554

In the Matter of the Establishment of domestic communications satellite facilities by non-governmental entities.	DOCKET No. 16495

SUPPLEMENTAL LEGAL BRIEF

AND

COMMENTS OF THE FORD FOUNDATION

Ginsburg and Feldman
Washington, D. C.

Attorneys for the
Ford Foundation

April 3, 1967

VOLUME II

TABLE OF CONTENTS

Page

INTRODUCTION 1

I. THE COMMISSION HAS THE POWER AT ISSUE IN THIS PROCEEDING 4

A. The Communications Act Of 1934 Empowered The Commission To Authorize Common And Non-Common Carriers To Construct And Operate Private Domestic Communications-Satellite Facilities 4

B. The Communications Satellite Act Of 1962 Does Not Preclude Commission Authorization Of Common And Non-Common Carriers To Construct And Operate Communications-Satellite Facilities For Private Domestic Services 6

1. The Primary Purpose Of The 1962 Act Was To Establish An International Communications-Satellite System 6

2. Section 102 (d) Of The 1962 Act Recognizes The Power Of The Commission To Authorize Private Domestic Communications-Satellite Systems 9

(a). The Language And Legislative History Of Section 102 (d) 9

(b). Senator Church's Comments 13

(c). Mr. Katzenbach's Statement 15

II. THE COMMISSION HAS AUTHORITY TO REGULATE BNSC EITHER AS A COMMON OR A NON-COMMON CARRIER 17

A. Regulation Of BNSC As A Non-Common Carrier. . . . 18

Page

1. The Traditional Exemption Of Cooperatives From Common-Carrier Regulation 20

2. Federal Communications Commission Regulation of Cooperatives 23

(a). Aeronautical Radio, Inc. 25

(b). Commission Regulation Of Community Antenna Television Systems (CATV) 27

B. Regulation Of BNSC As A Common Carrier 28

1. General Regulatory Rate-Making Practices 29

(a). "Value of Service" 29

(b). Preferential Rates To Users On The Basis Of Their Contribution To The Public Welfare . 31

(c). Free Service 33

(d). Public-Utility Contributions For Public Purposes 34

2. Federal Communications Commission Rate-Making Practices 35

III. THE PROPOSED ORGANIZATION AND OPERATIONS OF BNSC WOULD NOT CONFLICT WITH OTHER LEGISLATION . 39

A. BNSC Would Be Tax Exempt 39

B. NASA Has Authority To Provide Launch Facilities For BNSC 43

CONCLUSION 49

INTRODUCTION

The Ford Foundation's August 1, 1966, initial legal brief* in this proceeding, submitted in response to the Commission's March 2, 1966, Notice of Inquiry established that the Commission has the power to authorize non-common carriers to construct and operate communications -satellite facilities to meet specialized domestic needs.

The Foundation's December 12, 1966, reply brief,** submitted in response to the Commission's October 20, 1966, Supplemental Notice of Inquiry, summarized the legal basis of the Commission's power, demonstrated that the Commission is empowered to authorize common as well as non-common carriers, and responded to questions raised by other parties in their initial submissions. The Foundation's Reply Brief also analyzed various matters concerning Commission regulation of Broadcasters'Non-Profit Satellite Corporation (BNSC), the non-profit corporation proposed by the Foundation. Finally, it examined each of the legal issues raised in the Commission's Supplemental Notice of Inquiry.

---

*Legal Brief and Comments of The Ford Foundation in Response to Paragraphs 4(a) and 4(b) of the Commission's Notice of Inquiry of March 2, 1966, In the Matter of the Establishment of domestic non-common carrier communications-satellite facilities by non-governmental entities, hereinafter referred to as "The Foundation's Initial Brief."

**Reply Legal Brief and Comments of The Ford Foundation in Response to Paragraphs 4(a) and 4(b) of the Commission's Notice of Inquiry of March 2, 1966, and Paragraphs 3(b), 3(c) (5), and 3(d) of the Supplemental Notice of Inquiry of October 20, 1966, hereinafter referred to as "The Foundation's Reply Brief."

Most of the legal briefs filed by other parties last December support the Foundation's position that the Commission has the power at issue in this proceeding. The Communications Satellite Corporation and others, however, take a contrary position.

Several parties also maintain that even if the Commission is empowered to authorize non-governmental entities other than Comsat to construct and operate domestic communications-satellite facilities for private purposes, new legislation is necessary to carry out the Foundation's proposal.

This Brief does not repeat the detailed presentation of the Foundation's legal position contained in its prior briefs. Nor does it duplicate the responses in the Foundation's Reply Brief to contentions of other parties in their initial submissions. Rather, this Brief is primarily a reply to Comsat's Supplemental Brief of December 16, 1966. Although other parties in their December submissions reached conclusions contrary to some judgments of the Foundation, only Comsat's Supplemental Brief questions virtually all the Foundation's major legal judgments. It serves, therefore, as an appropriate focus for response.

Part I of this Brief responds directly to each of the objections raised to Commission authorization of common and non-common carriers to construct and operate domestic communications-satellite facilities.

Parts II and III of this Brief are directed to the Commission's inquiry whether BNSC may be licensed under present statutes, and, if not, what type of legislation is needed. The Foundation's position is that, as a matter of law, no new legislation is necessary to authorize BNSC.*

Part II examines issues concerning Commission regulation of BNSC as a common and as a non-common carrier. It concludes that non-common carrier treatment -- subject to comprehensive Commission regulation -- would be most appropriate, but that the Commission has ample power to authorize BNSC, as a common carrier, to enter into the rate arrangements proposed by the Foundation.

Part III deals with tax considerations and with the authority of the National Aeronautical and Space Administration to provide launch facilities for the proposed corporation.

---

*This April 3 submission by the Foundation includes a detailed discussion of the impact on its proposal of: (1) the President's recent legislative recommendations concerning non-commercial television; (2) the Report of the Carnegie Commission on Educational Television; and (3) S. 1160, now pending before the Congress.

I. THE COMMISSION HAS THE POWER AT ISSUE IN THIS PROCEEDING.

A. The Communications Act Of 1934 Empowered The Commission To Authorize Common And Non-Common Carriers To Construct And Operate Private Domestic Communications-Satellite Facilities.

The Foundation's Initial Brief and Reply Brief establish that under the 1934 Act the Commission has the power at issue in the proceeding. The language of the Act, its legislative history, and judicial and Commission decisions interpreting it were all analyzed in detail to demonstrate their support for this judgment.*

Comsat has entirely ignored the 1934 Act in framing its legal case. Its submissions repeatedly suggest that there was a statutory vacuum before the 1962 Satellite Communications Act.

The only substantive statement concerning the 1934 Act in either Comsat's Initial Brief or its Supplemental Brief is the following:

> The Communications Act alone does not empower the Commission to authorize the construction and operation of communication satellite facilities for domestic services.

/Comsat's Supplemental Brief, p. 4./ This assertion is contrary to the

---

*See the Foundation's Initial Brief, pp. 4-14, and the Foundation's Reply Brief, pp. 4-7.

Commission's own conclusion in 1961 and to the Commission cases, judicial decisions, and other authorities cited in the Foundation's prior briefs. Comsat mentions no authorities in support of its position. It provides no analysis or reasons. Rather, after making the assertion quoted above, it argues solely on the basis of the purported effect of the 1962 Communications Satellite Act. Thus it states:

> Whatever power the Commission may have had under the Communications Act before enactment of the Satellite Act, such power was refined, channeled and restricted by the latter statute.

/ Id. at 5. / On this issue, Comsat suggests that section 401 of the 1962 Act is determinative. / Id. at 6. / That section provides:

> Whenever the application of the provisions of this Act shall be inconsistent with the application of the provisions of the Communications Act, the provisions of this Act shall govern.

Section 401 is irrelevant to the question whether the 1934 Act grants the Commission the power at issue. It merely states that if the provisions of the two Acts are inconsistent, the 1962 Act shall govern. No such inconsistency is here involved.

In the absence of any authority or analysis to the contrary, it must be assumed that the Commission was correct in its 1961 conclusion: The 1934 Act empowered it to authorize non-governmental entities other than Comsat to construct and operate domestic communications-satellite facilities.

Comsat repeatedly states in its Supplemental Brief that the only alternative to its own monopoly over domestic communications by satellite would be totally unregulated development. /E.g., the result would be "a regulatory vacuum in the domestic field." Id. at 13./ In fact, however, the 1934 Act offers a complete set of standards for Commission regulation of domestic communications by satellite. If special safeguards are appropriate, the Commission has full power to establish them under the 1934 Act. Section 303(r) specifically directs the Commission to "make such rules and regulations . . . as may be necessary to carry out the provisions of this chapter . . . ." See the Foundation's Reply Brief, pp. 33-43, and this Brief, Part II, concerning Commission regulation of the non-profit corporation (BNSC) proposed by the Foundation.

B. The Communications Satellite Act Of 1962 Does Not Preclude Commission Authorization Of Common And Non-Common Carriers To Construct And Operate Communications-Satellite Facilities For Private Domestic Services.

Comsat's Supplemental Brief draws a series of conclusions to support its position that the 1962 Act grants it a monopoly in the field of domestic communications by satellite. Each of these conclusions is answered below.

1. The Primary Purpose Of The 1962 Act Was To Establish An International Communications-Satellite System.

Comsat's Supplemental Brief states:

> Clearly the Commission envisioned a position for the new corporation in the domestic field similar to Comsat's role as the chosen instrument of the United States in the field of international satellite communications.

[Id. at 12.] Former Chairman Minow's testimony before the Senate Committee on Aeronautical and Space Sciences is cited as authority. Neither Mr. Minow's testimony nor the testimony of any other witness supports this position.

Furthermore, Mr. Minow maintained that in 1961 the Commission had the power here at issue -- indeed, he stated that "no one at that time suggested that any legislation was needed." Hearings on Communications Satellites Before the House Committee on Interstate and Foreign Commerce, 87th Cong., 1st Sess., pt. 1, at 86 (1961). Nothing in the legislative history of the 1962 Act suggests that he or others believed that exercise of the Commission's power was precluded by that Act. To the contrary, the debates on the 1962 Act indicate support, among those who considered the matter, for the view that the Commission has the power to authorize domestic private communications-satellite facilities. See the Foundation's Initial Brief, pp. 20-21, and the Foundation's Reply Brief, pp. 20-21.

On the other hand the Foundation has never maintained, as suggested by Comsat's Supplemental Brief, that:

> the Satellite Act was directed only to the establishment of an international communications satellite system, and therefore that the Commission may act without regard to the policies of the Satellite Act with respect to domestic satellite communications services.

[Comsat's Supplemental Brief, pp. 10-11.] Rather, as the Foundation's prior briefs clearly state, its position is that "the primary purpose of the 1962 Act was to establish an international communications satellite system." [*E.g.*, the Foundation's Initial Brief, p. 14.] This proposition would seem beyond dispute.

Throughout the entire Congressional consideration of the 1962 Act, it was seen as a step toward a "*global* communications network." [Section 102(a).] [Emphasis added.] Representatives Moss and Dingell, for example, stated:

> In effect, therefore, the Corporation merely will be the repository of whatever may be the U.S. interest arising from international agreements covering the system.

H.R. Rep. No. 1636, 87th Cong., 2d Sess. 26 (1962). Even Senator Gore, a strong opponent of the measure, maintained that:

> We need no satellite communication system, so far as I know, to communicate with each other in the United States. The principal purpose and intent and nature of the use of this new medium of communications is transoceanic, intercontinental, intercountry, international communications.

108 Cong. Rec. 1531 (1962). *See also* the authorities cited in the Foundation's Initial Brief, pp. 14-18, and the Foundation's Reply Brief, pp. 7-8, 14-16.

As discussed in the Foundation's Initial Brief, this was the reason, for example, why the legislation was referred to the Senate Foreign Relations Committee, *see S. Rep. No*. 1873, 87th Cong., 2d Sess. (1962), why State Department witnesses testified at virtually every Congressional hearing on the statute, and why the Act granted the President such extraordinarily broad powers over the affairs of a private corporation. [Section 201(a).]

A recent House Report analyzes the basis for the almost exclusive

Congressional attention to international communications.

> Proponents of the legislation pushed it through Congress in the face of a strong filibuster, contending that quick action was needed to meet Soviet competition, that expanded international communications were increasing in demand, and that timely preparations must be made for the 1963 meeting of the International Telecommunication Union, which had been called to allocate frequencies for space communications.

Second Report on Satellite Communications by the House Committee On Government Operations, H.R. Rep. No. 178, 89th Cong., 1st Sess. 22 (1965).

At the same time, it is apparent from the terms of section 102 (d) of the 1962 Act that Congress anticipated, under certain circumstances, that Comsat might participate in domestic communications by satellite at some time in the future. Section 102 (d) permits such participation "where consistent with the provisions of this Act . . . ."

2. Section 102 (d) Of The 1962 Act Recognizes The Power Of The Commission To Authorize Private Domestic Communications-Satellite Systems.

(a). The Language And Legislative History Of Section 102 (d).

Section 102 (d) states that:

> It is not the intent of Congress by this Act . . . to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs or if otherwise required in the national interest.

Comsat's Supplemental Brief states: "Section 102 (d) standing alone is not a delegation of authority." /Id. at 16./ The Foundation agrees. Absent other legislation, the Commission would not be empowered, on the basis of section 102 (d) alone, to authorize the construction and operation of communications-satellite facilities for private domestic services. But section 102 (d) does not stand alone. The Communications Act of 1934 is the Commission's basic legislative mandate. That Act empowers the Commission to make the authorizations at issue in this proceeding. Section 102 (d) is simply a specific Congressional recognition of that power.

The language of section 102 (d) is the strongest evidence of its meaning. The express statutory statement that the 1962 Act does not "preclude the creation of additional communications satellite systems . . . ." cannot be reconciled with Comsat's conclusion that the 1962 Act does preclude such systems.

Comsat in its Supplemental Brief maintains, however, that it is the only entity authorized to construct and operate private communications-satellite facilities for domestic use, and that section 102 (d) is just "a general declaration of policy." /̄Id. at 17._/ Furthermore, in spite of the specific language in section 102 (d), Comsat suggests that the provision was intended to do no more than make "clear that Congress was reserving the power" to create additional systems. /̄Comsat's Initial Brief, pp. 7-8._/ Such a reservation would have been unnecessary both because section 301 provides that "The right to repeal, alter, or amend this Act at any time is expressly reserved," and because one Congress cannot bind successive Congresses.

Apart from its express language, the legislative history of section 102 (d) supports the Foundation's position. When the legislation was first passed by the House, section 102 (d) provided:

> The Congress reserves to itself the right to provide for additional communications satellite systems if required to meet unique governmental needs or if otherwise required in the national interest.

See H.R. 11040, as passed by the House of Representatives on May 3, 1962, and introduced in the Senate on May 4, 1962. If Congress had adopted the House version, further legislation would be required before additional domestic facilities could be developed. The Senate refused to accept the House language, however, and substituted the current version of section 102 (d). The House acceded. Defeat of the House language shows that Congress considered and rejected the position that further legislation is a prerequisite to Commission authorization of domestic facilities.

In spite of this substantial change from the House to the final version, Comsat's Supplemental Brief maintains that it "was not considered to be a change connoting a substantive grant of power to the Commission." [*Id*. at 19.] The issue is misstated. The Foundation has never suggested that section 102 (d) *grants* the Commission any power. Rather, the provision is a legislative *recognition* of a pre-existing Commission power.

By its terms, the final version of section 102 (d) marked a major change from the version as first passed by the House. Rather than requiring additional legislation to authorize additional systems, it expressly states that such legislation is not necessary. It is hard to imagine a clearer Congressional pronouncement.

Contrary to the conclusions in Comsat's Supplemental Brief,* the remarks of Representative Harris, Chairman of the House Committee that sponsored the original House version, support this interpretation. He stated:

> It was agreed that it was not the intent of the Congress by this act to preclude the creation of an additional communication satellite system or systems, and so forth. I thought the suggestion made by our distinguished Speaker was very good, that we should take a positive rather than a negative approach.
>
> The amendment, therefore, is that Congress reserve to itself the right to provide an additional communications satellite system if required to meet unique governmental needs or if otherwise required in the national interest. It is a positive approach instead of a negative approach.

108 Cong. Rec. 7523-24 (1962). In Representative Harris's judgment, therefore, and in the judgment of the House when it originally adopted the Act, a "positive" approach (i.e., one in which Congress would pass upon each new proposal for an additional communications-satellite system) was preferable to a "negative" approach (i.e., one in which the possibility of additional systems without new legislation was specifically recognized). In the end, however, Congress chose the latter alternative.

Finally, Comsat's interpretation of section 102 (d) would seem to apply equally to section 201 (a) (6) and, therefore, to any governmental communications-satellite system. If the 1962 Act is comprehensive legislation covering all aspects of communications by satellite, both international and domestic, and section 102 (d) is no more than an advance warning of the possibility of future legislation, then by what authority has the Defense Department established its own communications-satellite system?

---

*Comsat's Supplemental Brief, p. 19, cites only a small portion of Representative Harris's statement, and omits entirely the excerpt quoted above.

In fact, Secretary McNamara emphasized, during the debates on the 1962 Act, that section 102 (d) was necessary to ensure that the development and operation of a specialized communications-satellite system for military purposes would not be affected by the establishment of the international system, just as Senator Church and others emphasized that the international system would not preclude the establishment of other domestic commercial systems. *See*, *e.g.*, *Hearings on the Communications Satellite Act of 1962 Before the Senate Committee on Foreign Relations*, 87th Cong., 2d Sess., at 292, 301 (1962). *See also* letter from Cyrus R. Vance, General Counsel, Department of Defense, to the Chairman of the Senate Commerce Committee (May 10, 1962) reprinted in *S. Rep. No*. 1544, 87th Cong., 2d Sess. 37-38 (1962).

(b). *Senator Church's Comments*.

Senator Church, the only member of Congress to speak at length on section 102 (d) stated:

> The wisdom of the last clause [of section 102 (d)] 'or if otherwise required in the national interest' is perfectly apparent. *We cannot now foretell how*

> *well the corporate instrumentality established by this act will serve the needs of our people. If it should develop that the rates charged are too high, or the service too limited, so that the system is failing to extend to the American people the maximum benefits of the new technology*, or if the Government's use of the system for Voice of America broadcasts to certain other parts of the world proves to be excessively expensive for our taxpayers, *then certainly this enabling legislation should not preclude the establishment of alternative systems whether under private or public management*. And just as certainly is that gateway meant to be kept open, just in case we should ever have to use it, by the language to be found in the bill's declaration of policy and purpose to which I have referred.

108 *Cong. Rec*. 16362 (1962) (Emphasis added.) Comsat's Supplemental Brief states that:

> His [Senator Church's] comment, we believe, places in proper perspective the weight that should be accorded to a non-operative provision of the Satellite Act. The Commission cannot reasonably rely on such a non-operative statutory provision as its primary source of power for authorizing the construction and operation of communications satellites by entities other than Comsat, let alone for authorizing an entirely new communications satellite system for the provision of domestic service.

[*Id*. at 22-23.] Again, the issue is misstated. The Foundation has never maintained that section 102 (d) is the Commission's "primary source of power for authorizing" anything. But section 102 (d) does, as Senator Church's remarks make clear, recognize the Commission's pre-existing power under the 1934 Act.

Comsat's Supplemental Brief, however, cites Senator Church's remarks to support the conclusion that section 102 (d) "had nothing to do with communication satellite facilities for use in connection with non-governmental communications services." [*Id.* at 24.] Senator Church's words are to the contrary. He referred specifically to "the establishment of alternative systems, whether under *private* or public management." (Emphasis added.)

(c). *Mr. Katzenbach's Statement*.

Comsat's Supplemental Brief states that:

> Nowhere in his [Mr. Katzenbach's] testimony does it appear he assumed that the proposed Satellite Act would grant power to the Commission to authorize the construction and operation of non-governmental communications satellites by any United States entity other than Comsat.

[*Id.* at 25-26.] Once more, the issue is misstated -- section 102 (d) does not grant power to the Commission, but it does recognize a pre-existing grant of power under the 1934 Act.

Mr. Katzenbach's testimony during the Hearings on the 1962 Act supports this interpretation of section 102 (d). In response to Senator Kefauver's concern about businesses that need communications-satellite services but "don't want to make a deal with a communications carrier" Mr. Katzenbach said:

> Then they have to get into the business themselves, sir. And I suppose if that is a practicable way of doing it, then that is what should be done. But these are responsibilities as to who is to be licensed for what purposes, which are given to the Federal Communications Commission.

Hearings on Antitrust Problems of the Space Satellite Communications System Before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary, 87th Cong., 2d Sess., pt. 1, at 56 (1962).

On the basis of these authorities, the Commission has full power under the 1934 Act to authorize BNSC to construct and operate the facilities proposed by the Foundation.

II. THE COMMISSION HAS AUTHORITY TO REGULATE BNSC EITHER AS A COMMON OR A NON-COMMON CARRIER.

Comsat's Supplemental Brief concludes that "at least five elements of the Foundation's proposal . . . would be beyond the Commission's power without specific Congressional action." [*Id.* at 38.] The first three of these "elements" can be considered collectively. In sum, they are that the Commission cannot authorize BNSC either to transmit educational television without charge or to generate funds for educational-television programming.*

A predicate of Comsat's position is that BNSC will be a common carrier as defined by section 153 (h) of the 1934 Act. In fact, however, the 1934 Act authorizes the Commission to treat BNSC either as a non-common carrier or as a common carrier. In our judgment, non-common carrier treatment -- subject to comprehensive Commission regulation -- would be most appropriate. We

---

*The fourth "element" involves tax considerations and is analyzed in Part III, *infra*. The fifth "element" *is* that the Foundation's proposal "would raise serious antitrust questions." [Comsat's Supplemental Brief, p. 39.] None of these questions is specified. In our judgment, none exist.

Comsat's Supplemental Brief also states: "[I]t should be noted that the Commission would not, in light of section 201 (c) (7) of the Satellite Act, have the power to authorize those stations which the Ford Foundation proposes be owned by television stations." [*Id.* at 38.] The short answer is that section 201 (c) (7) applies only to earth stations utilized in connection with the international system established under the 1962 Act.

also believe, however, that the Commission has ample power to authorize BNSC, as a common carrier, to enter into the rate arrangements proposed by the Foundation.

A. Regulation Of BNSC As A Non-Common Carrier.

The Commission has held that "the legislative history of the /̅1934̲/ Act makes it clear that Congress intended that the common-carrier regulatory provisions thereof should not apply to persons who are not common carriers in the ordinary sense of the term." Frontier Broadcasting Co. v. Collier, 24 F.C.C. 251, 254 (1958) (citing H.R. Rep. No. 1850, *73d Cong., 2d Sess. (1934).)**

BNSC would be a non-profit cooperative undertaking by commercial and non-commercial users. The arrangement would materially differ, therefore, from the usual common carrier -- a profit-making enterprise organized to earn a fair return on the investment of its owners. There is, however, a more fundamental difference. BNSC would be established and maintained for a distinctive public purpose -- operation of a satellite system that provides both free distribution and revenue for non-commercial television and radio. It would not, therefore, be a common carrier in the "ordinary" sense.*

---

*H.R. Rep. No. 1850, at 4, states:

> Since a person must be a common carrier for hire to come within this definition, it does not include press associations or other organizations engaged in the business of collecting and distributing news services, which may refuse to furnish to any person service which they are capable of furnishing, and may furnish service under varying arrangements, establishing the service to be rendered, the terms under which rendered, and the charges therefor.

The Conference Report on the 1934 Act, H.R. Rep. No. 1918, 73d Cong., 2d Sess. 46 (1934) states:

> /̅T̲/he definition /̅of common carrier̲/ does not include any person if not a common carrier in the ordinary sense of the term . . . .

(Emphasis added.)

This does not mean, however, that the Commission lacks power to regulate the management and operations of BNSC. On the contrary, the Commission has authority to supervise every aspect of BNSC's arrangements, including its rate structure. As the Commission recently stated:

> The Communications Act has given broad authority to the Commission to regulate the use of radio and to prescribe the service of radio stations in the public interest. Also, the Act neither prohibits the use of radio on a cooperative basis, nor prescribes a method for regulating that use, and we think we have ample authority to prescribe any special method of regulating the cooperative use of private systems that would best serve the public

---

*Apparently the only definition of a common carrier in the Commission's regulations is: "A person who holds himself out to the general public to engage in the transportation of passengers or property without discrimination for compensation as a regular occupation or business." 47 C.F.R. § 93.8 (c) (1966). The definition is stated for purposes of Motor Carrier Radio Service. BNSC would obviously be excluded by this definition if it were applied to the communications field. Section 153 (h) of the 1934 Act, of course, defines a "common carrier" as "any person engaged as a common carrier for hire, in interstate or foreign communication by wire or radio or in interstate or foreign radio transmissions of energy."

> interest. See Philadelphia Television Broadcasting Co. v. FCC, _____ U.S. App. D.C._____, 359 F.2d 282 (1966).
>
> . . .
>
> We think that the Commission has a duty to supervise closely the operation of cooperative use of microwave systems, and the requirement for submitting a financial statement each year and a statement showing the relation of the contributions of each participant to his use of a station will be helpful to us in discharging that responsibility.

In the Matter of Amendment of the Commission's rules to permit expanded cooperative sharing of Operational Fixed stations, FCC Docket No. 16218, at 13, 14 (1966).

Treatment of BNSC as a non-common carrier would accord both with general regulatory practice in this country and with long-established Commission practice.

1. The Traditional Exemption Of Cooperatives From Common-Carrier Regulation.

Cooperatives have long been treated as outside the ambit of common-carrier regulation. In some areas cooperative arrangements are expressly authorized by statute. The Capper-Volstead Act, 7 U.S.C. §§ 291-92,* for example, authorizes agricultural producers to organize and operate cooperatives for the purpose of processing, preparing, handling and marketing agricultural produce.* These arrangements are specifically exempted from the antitrust laws. The Fishermen's Collective Marketing Act, 15 U.S.C. §§ 521-22, provides essentially the same benefits to fishing cooperatives as the Capper-Volstead Act provides to agricultural cooperatives. Certain cooperative arrangements in export and foreign trade receive similar treatment under the Webb-Pomerene Act, 15 U.S.C. §§ 61-65. *See generally, Hack, Legal Aspects of Small Businesses' Use of Cooperative Arrangements* (1964).

---

*All citations to U.S.C. are to the latest official compilation.

In the field of public-utility regulation, some federal statutes expressly exempt certain cooperatives from coverage. Interstate Commerce Commission regulation of agricultural cooperatives is precluded, for example, under the Motor Carrier Act, 49 U.S.C. § 303 (b) (5). In other areas, exemptions have developed because a regulatory agency has determined that the purpose of common-carrier regulation is inapplicable to cooperatives. Thus, for example, the Federal Power Commission to date has declined to regulate the rates of rural electric cooperatives, although it would appear to have jurisdiction to do so. *See* Note, *Regulation of Rural Electrical Cooperatives*, 1966 *Utah L. Rev*. 103, 121-22 n. 110. Similarly, a shipper's cooperative that leased trucks and performed non-profit interstate transportation service for its members has been held to be a contract rather than a common carrier within the meaning of the

---

*Other cooperative agricultural arrangements are authorized by, *e.g.*, the Cooperative Marketing Act of 1926, 7 U.S.C. §§ 451-57; and the Agricultural Marketing Agreement Act of 1937, 7 U.S.C. § 601.

Interstate Commerce Act. See ICC v. Shippers Coop. Inc., 196 F. Supp. 8 (S.D. Cal. 1961).

The rationale for this treatment of non-profit cooperatives lies both in the nature of such arrangements and in the character of the service they provide. Lack of profit per se has not always been held to exclude an entity from common-carrier treatment, see Batesville Tel. Co. v. Public Serv. Comm'n, 38 F.2d 511 (D.C. Ind. 1930) rev'd on other grounds, 46 F.2d 266 (7th Cir. 1931), but many courts have held that regulatory jurisdiction does not extend to non-profit enterprises. See, e.g., Philadelphia Ass'n of Wholesale Opticians v. Pennsylvania Pub. Util. Comm'n, 152 Pa. Super. 89, 30 A.2d 712 (1943).

The purpose of cooperatives is more significant than their non-profit character. It is generally held that the offering of service to members of a cooperative does not constitute common-carrier service to the public within the meaning of regulatory legislation. See Packel, The Law of Cooperatives 271 (2d ed. 1947), and the authorities cited in id. at 271 n. 98. The primary purpose of such arrangements is not to serve the public but to enter into a special relationship among the members. [Id. at 279.]* In the case of BNSC, this distinction is strengthened because the members of the consortium will join together to meet the needs of educational television.

---

*Even when cooperatives provide service to non-members, unlike BNSC, common-carrier regulation is often excluded. Regarding such situations, Packel, op. cit. supra, at 285, states:

> An illustration of the relationship which must exist between the regulation and the underlying purpose or purposes of the legislation appears in laws pertaining to the safety of the public in the use of highways. A duty, imposed by legislation with that end in view, upon a cooperative to obtain a permit for the use of highways would be valid so long as the conditions under which the permit was granted were related to public safety. [Citations omitted.] A regulation of rates, however, would hardly seem to come within the purview of that purpose.

BNSC would not hold itself out to provide service to the general public in exchange for obtaining a fair return on investment. Rather, it would provide service to its members as a cooperative undertaking and on a wholly consensual basis to further educational television.

2. Federal Communications Commission Regulation Of Cooperatives.

The Commission has traditionally considered cooperatives as a distinct category of non-common carriers. Under the Commission's rules, cooperative use of communications facilities by a variety of non-common carrier enterprises has been authorized. In the fields of public safety, industrial services, land transportation, and aviation, the Commission has permitted substantial cooperative sharing of facilities for a wide range of purposes. There are no precise figures on the extent of such use, but it is unquestionably extensive.

Last July the Commission amended its rules to permit expanded cooperative sharing of Operational Fixed stations. These rules now provide for cooperative use of such stations:

> (1) Without charge to any of the participants in its use, or
> (2) On a non-profit cost-sharing basis pursuant to a written contract between the parties involved which provides that the licensee shall have control of the license facilities and that contributions to capital and operating expenses are accepted only on a cost-sharing, non-profit basis, prorated equitably among all participants using the facilities.

In the Matter of Amendment of the Commission's rules to permit expanded cooperative sharing of Operational Fixed stations, FCC Docket No. 16218, at Appendix A (1966).

BNSC would meet these tests. First, it would be a non-profit enterprise. Second, its costs would be shared pursuant to a written contract between the parties involved. Third, the contract would provide for an equitable proration of costs among the parties. The fact that only the commercial users would contribute to costs does not disturb this conclusion, for the very purpose of the undertaking would be to help meet the needs of non-commercial television.

The new rules permitting expanded cooperative sharing of Operational Fixed stations also provide for the filing of an annual report containing a financial statement, the names of those who have used the facilities, a statement as to the use of the facilities by each user, and other relevant information. BNSC would provide the Commission with such information as well as other data that might be useful.

In amending the rules concerning Operational Fixed stations, the Commission specifically held that the public interest would be served by authorizing private communications facilities managed and controlled on a cooperative basis:

> The touchstone for the regulation of the use of radio is the public interest and we think that, under that standard, we have ample authority to permit cooperative use of radio stations if we find, as we have, that the public interest would be served and the larger and more effective use of radio would be encouraged. Furthermore, we have long made the distinction between persons engaging in providing service as common carriers and those rendering service on a non-profit cooperative basis.

/ *Id*. at 12. / The Commission cited *Aeronautical Radio Inc. v. American Tel. & Tel. Co*., 4 F.C.C. 155 (1937) in support of this conclusion.

(a). *Aeronautical Radio, Inc*.

Aeronautical Radio, Inc. is a prime example of a non-profit cooperative that provides communications service under license from the Commission. The company manages a major integrated communications network that meets the needs of commercial airlines and other aviation users. It was founded in 1929 when the future of commercial aviation was uncertain -- just as the future of communication by satellite is uncertain today. During the 1920's each airline sought to operate its own radio service, and potentially serious frequency conflicts were developing. Aeronautical Radio, Inc. was a sound solution. It serves both members and non-members, providing them with communications service in the United States and abroad.

The company controls over 1200 ground stations. More than 400 of these stations are interconnected by 40,000 miles of private-line telephone circuits, arranged in some 60 networks. It also owns and staffs high-frequency facilities for overseas service from stations in New York, Okinawa, and five other points.

Costs are allocated on the basis of several criteria. Private aircraft that make occasional use of the company's domestic facilities, for example, pay a flat fee of $2 per radio contact. The high-frequency stations are financed on the basis of a "20-80" formula. Twenty percent of the total station costs each month is divided equally among all users during that month. The remaining 80 percent is allocated among the users on the basis of number of contacts with the station.

The corporation has issued 46,000 shares of stock, at $10 per share. Major United States domestic airlines are the largest stockholders; typically, each owns 100 or more shares. Many smaller domestic airlines and some foreign airlines own smaller blocks of stock. The stock is sold and repurchased at the fixed price of $10 per share. The only incentive to hold stock, therefore, derives from voting rights. Members and non-members are treated exactly the same in service provided and cost of services.

The company makes periodic reports to the Commission that disclose its full financial situation and the details of its current operations. The Commission has, therefore, a complete record of the organization's operations and can act at any time if the company fails to meet established standards. Similarly, the Commission will have full authority to regulate all aspects of the management, operations, and finances of BNSC.

We do not suggest that BNSC will be just another cooperative enterprise along the lines of Aeronautical Radio, Inc. or other non-profit arrangements previously approved by the Commission. The needs of educational television are unique. In response to those needs, the Foundation's proposal is unique in both the size of its undertaking and in the nature of its arrangements. But we do suggest that on the analysis and authorities here considered there is ample arrangement, the Commission would exercise full supervision over every aspect of the corporation's management, operations, and finances.

(b). Commission Regulation Of Community Antenna Television Systems (CATV).

The Commission's regulations concerning CATV provide a close analogy for the exercise of non-common carrier jurisdiction over BNSC. The Commission's "Memorandum On Its Jurisdiction and Authority" in the 1965 CATV proceeding first noted the breadth of the relevant statutory provisions and then stated that "there would seem to be no question but that CATV systems are engaged in interstate communications by wire or radio." 30 Fed. Reg. 6087 (1965). The same will be true of BNSC. The Memorandum then referred to the Commission's broad rule-making authority to carry out the provisions of the Act and found that CATV was within that authority. This will also be true of BNSC's operations. As the Commission stated in the Memorandum, quoting from the Supreme Court's opinion in National Broadcasting Co. v. United States, 319 U.S. 190, 217, 218-19 (1943):

> The avowed aim of the Communications Act of 1934 was to secure the maximum benefits of radio to all the people of the United States. To that end Congress endowed the Communications Commission with comprehensive powers to promote and realize the vast potentialities of radio . . . . In the context of the developing problems to which it was directed, the Act gave the Commission not niggardly but expansive powers.

B. Regulation Of BNSC As A Common Carrier.

As suggested in the Foundation's Reply Brief, BNSC might also be considered as a common carrier, although non-common carrier treatment would be more appropriate. The Commission has ample power to authorize BNSC, as a common carrier, to enter into the rate arrangements suggested by the Foundation. Under these arrangements, the domestic satellite service would provide free channels for educational television and would also generate funds for educational-television programming.

Section 202 (a) of the 1934 Act provides that rate discrimination by common carriers is unlawful only if such discrimination is "unjust or unreasonable." Section 201 (b) specifies classifications, such as "press," that are "just and reasonable" and for which "different charges may be made." This listing includes a "commercial" class and "such other classes as the Commission may decide to be just and reasonable. . . ." (Emphasis added.) On the basis of the authorities discussed below, this provision gives the Commission full power to approve the proposed BNSC rate discrimination between commercial and non-commercial users, on a wholly consensual basis, as a "just and reasonable" classification.

Like the Commission, virtually all regulatory agencies must comply with statutes prohibiting certain forms of rate discrimination. These statutes, like the 1934 Act, have consistently been held to preclude only "unjust" or "unreasonable" discrimination. See, e.g., Nebraska Limestone Producers

Ass'n v. All Neb. R.Rs., 168 Neb. 786, 97 N.W. 2d 331 (1959); In re Delaware Power & Light Co., 56 P.U.R. 3d 1 (Del. Pub. Serv. Comm'n 1964). The Commission, other administrative agencies, and the courts have all developed criteria for ascertaining when discrimination is "just" or "unreasonable." These criteria involve a variety of economic and social considerations.

The number of cases concerning rate discrimination previously considered by the Commission is obviously less than that faced by the whole range of state and federal regulatory agencies. It is helpful, therefore, to consider first the general practices of such agencies and then to focus on specific policies developed by the Commission.

1. General Regulatory Rate-Making Practices.

(a). "Value of Service."

Perhaps the most important basis for differential rate treatment is "value of service." See, e.g., Northern P. Ry. v. North Dakota, 236 U.S. 585, 599 (1915); Nebraska Limestone Producers Ass'n v. All Neb. R.Rs., 168 Neb. 786, 97 N.W.2d 331 (1959); J. Bonbright, Principles of Public Utility Rates ch. V (1961); D. Locklin, Economics of Transportation 144-46 (6th ed. 1966); D. Pegrum, Transportation: Economics and Public Policy 174, 230 (1963).

In substance, this theory allows a utility to price its services on the basis of ability to pay. The frequent applications of this concept represent a rough approximation of the economist's notion of marginal-cost pricing. Many customers of utility service are unable to pay more than the marginal cost of such service plus a small percentage contribution to fixed expenses. If the price-to-marginal-cost ratios were identical for all rates, these customers would be forced to forego service, thus placing the burden of compensating investors and covering other fixed costs on fewer customers. Marginal-cost pricing permits customers to receive service at incremental cost plus whatever contribution they can make to fixed costs. *See* *Locklin*, *op. cit. supra*, at 138; *Smith*, *Regulation of Returns to Transportation Agencies*, 24 *Law & Contemp. Prob*. 702 (1959).

Comsat cites only *In re South Carolina Generating Co*., 16 F.P.C. 52 (1956) to support its criticism of the rate arrangements proposed by the Foundation. Comsat's Supplemental Brief refers to the issues before the Federal Power Commission in that case as "strikingly similar to that posed by the Ford proposal." [*Id.* at 41.] In fact, however, the issues are completely different. In the F.P.C. case, South Carolina Generating Co. argued for a rate based on value of service without regard to cost of service. The Georgia Power Company was willing to pay this rate because it could pass the costs on to its customers. The Georgia Public Service Commission objected, however, on behalf of the power consumers of Georgia.

Unlike the South Carolina Generating Co., BNSC will treat all commercial users alike; non-commercial television is by definition non-profit. Moreover, the commercial networks will consent to the proposed arrangements for non-commercial television by agreeing to the charter of BNSC. Finally, and most important, non-commercial television, like the press -- which received preferential rates from common carriers -- serves a vital public function. *See* *In the Matter of American Tel. & Tel. Co. (Private Line Case)*, 34 F.C.C. 1094, 1098 (1963); *In re Application of NTA Television Broadcasting Corp.*, 22 Pike & Fischer RR 273 (FCC 1961).

(b). *Preferential Rates To Users On The Basis Of Their Contribution To The Public Welfare*.

Preferential rates have also been justified on the ground that a class of customers is entitled to favorable treatment because it provides a service that promotes the public welfare. Rural electric cooperatives, for example, have frequently been granted preferential rates because they are instrumental in providing rural areas with the advantages inherent in the use of electric power. *See*, *e.g.*, *St. Michaels Util. Comm'n v. Eastern Shore Pub. Serv. Co.*, 63 P.U.R. 3d 337 (FPC 1966); *In re Southwestern Pub. Serv. Co.*, 33 F.P.C. 343 (1965); *Carpenter v. Pennsylvania Pub. Util. Comm'n*, 141 Pa. Super. 447, 15 A.2d 473 (1960); *In re Wholesale Electric Rates*, 19 P.U.R. (n.s.) 22 (Ky. Pub. Serv. Comm'n 1937); *Highland Util. Co. v. Western Colo. Power Co.*, 48 P.U.R. (n.s.) 22, 26 (Mo. Pub. Serv. Comm'n 1937); *In re Oklahoma Gas & Elec. Co.*, 57 P.U.R. (n.s.) 159 (Okla. Corp. Comm'n 1944). The following is a typical statement of the rationale for such discrimination:

> No present class of utility customers can be considered comparable with the rural electrification cooperative association. In consideration of the

> enthusiasm of these organizations and their active load-building programs, it appears extremely likely that their service will develop characteristics substantially dissimilar, particularly in its diversity with existing loads, from any other class of electric business. Furthermore, even if it were not for such distinguishing features of load factor and diversity, *due recognition must be given to the nonprofit, government-sponsored nature of the business and the vast social benefits which will follow from improved living conditions on the farms*.

In re Wholesale Electric Rates, 19 P.U.R. (n.s.) 22, 28 (Ky. Pub. Serv. Comm'n 1937). (Emphasis added.)

Similarly, urban-housing projects have been given preferential rates in order to help combat slums. *See* *Staten Island Edison Corp. v. New York City Housing Authority*, 184 Misc. 2d 564, 52 N.Y.S. 2d 639 (Richmond County Ct. 1944), *aff'd*, 269 App. Div. 996, 58 N.Y.S. 2d 427 (App. Div. 1945). In addition, schools, hospitals, charitable and religious groups have been granted preferential rates. *See*, *e.g.*, *New York Tel. Co. v. Siegel-Cooper Co.*, 202 N.Y. 502, 96 N.E. 109 (1911); *In re Atlanta Gas Light Co.*, 68 P.U.R. (n.s.) 23 (Ga. Pub. Serv. Comm'n 1946); W. McKenna, *School Fares -- Whose Subsidy?*, 60 *Pub. Util. Fort.* 451 (1957).

Furthermore, low rates have been utilized to aid important local industries. *In re Huachuca Water Co.*, 9 P.U.R. (n.s.) 317 (Ariz. Corp. Comm'n 1946), and to promote infant industries. *See*, *e.g.*, *Air Passenger Tariff Discount Investigation*, 3 C.A.B. 242 (1942). The Civil Aeronautics Board, for example, has favored preferential rates designed to stimulate air travel. *Ibid*.

In many other instances, national regulatory bodies have concluded that the public welfare will be promoted by granting certain consumers service at rates that do not cover marginal costs. Both railroads, *see*, *e.g.*, *King v. United States*, 344 U.S. 254 (1952); *F. Edwards*, *Cost Standards and Rate Discrimination* (appendix A) (1953) and airlines, *see*, *e.g.*, *P. Cherington*, *Airline Price Policy* 61 (1958) carry some passengers for less than marginal cost in order to maintain a means of transportation vital to the public welfare. Railroads have also transported a wide variety of commodities at rates below the marginal cost of service. *Edwards*, *op. cit. supra*.

(c). *Free Service*.

State and federal regulatory commissions have allowed free service to designated parties in certain circumstances. Because such service provides a full subsidy, it has generally been authorized only when an important public purpose is furthered. Beyond question, BNSC would further such a purpose.

The District of Columbia Public Utilities Commission, for example, allowed free transportation to commuters, in an attempt to improve congested traffic conditions. *See* *In re Capital Transit Co.*, 5 P.U.R. 3d 101 (D.C. Pub. Util. Comm'n 1954). Travel agents and tour conductors have been granted free air transportation in order to encourage them to promote air travel. *See Free and Reduced Rate Air Transportation*, 14 C.A.B. 481 (1951). Other groups receiving free services from various common carriers include clergymen, *see* *ICC v. Baltimore & O. R.R.*, 145 U.S. 263 (1892); *State ex. rel. Sorensen v.*

Chicago B. & Q. R.R., 112 Neb. 248, 199 N.W. 534 (1934), government employees, see In re Louisville Transit Co., 53 P.U.R. 3d 41 (Ky. Dep't of Motor Transp. 1963), and charitable workers, see ICC v. Baltimore & O. R.R., 145 U.S. 263 (1892). In addition, the Civil Aeronautics Board has approved free air transportation for students travelling to educational exchanges. See Free and Reduced Rate Air Transportation, 14 C.A.B. 481 (1951).

(d). Public-Utility Contributions For Public Purposes.

As proposed by the Foundation, BNSC would generate funds for non-commercial programming as well as provide free transmission for non-commercial broadcasts. Such grants accord with the practice by many public utilities of making direct contributions to organizations and individuals that provide public benefits. Many regulatory commissions encourage utilities to make charitable contributions by treating such gifts as operating expenses, properly charged to customers. See, e.g., In re General Tel. Co., 44 P.U.R. 3d 247 (Fla. R.R. & Pub. Util. Comm'n 1962); In re New England Tel. & Tel. Co., 35 P.U.R. 3d 100 (Vt. Pub. Serv. Comm'n 1960). These contributions may be given to a wide range of groups. The Michigan Public Service Commission, for example, approved a donation for the benefit of education. See In re Consumers Power Co., 38 P.U.R. 3d 355 (Mich. Pub. Serv. Comm'n 1961). In Illinois, a contribution to the community fund and the Red Cross was approved. See Vrtjak v. Illinois Bell Tel. Co., 32 P.U.R. 3d 385 (Ill. Commerce Comm'n 1959).

On the national level, the Federal Power Commission has approved gifts in reasonable amounts to any religious, charitable, scientific, literary, or educational organization that qualifies under section 170 (c) of the Internal Revenue Code. *See* *United Gas Pipe Line Co.*, 31 F.P.C. 1180 (1964). The rationale for approving such gifts is that a utility, as a "good citizen," should encourage activities beneficial to the community.

Several other agencies including the Federal Communications Commission, however, maintain that charitable contributions must come from the shareholders. *See*, *e.g.*, *In re Hartford Elec. Light Co.*, 35 P.U.R. 3d 64 (Conn. Pub. Util. Comm'n 1960); *Ex parte Breaux Bridge Tel. Co.*, 41 P.U.R. 3d 260 (La. Pub. Serv. Comm'n 1961); *In re Henderson Tel. Co.*, 41 P.U.R. 3d 248 (Neb. Pub. Serv. Comm'n 1961). The basis for this judgment is that "public service company patrons should [not] be compelled to make involuntary contributions to charities through the rates that they pay for public utility services." *In re Southern New England Tel. Co.*, 20 P.U.R. 3d 34, 39 (Conn. Pub. Util. Comm'n 1957). This rationale is inapplicable to BNSC. Its customers will own its facilities and will have consented, in a consortium agreement, to its rate structure. They will not, therefore, be obliged to look to the Commission for protection.

2. *Federal Communications Commission Rate-Making Practices*.

In judging individual rates the Commission has stated that cost of service plus a return equal to the cost of capital is the primary measure of proper rates. *See*, *e.g.*, *American Tel. & Tel. Co. (Private Line Case)*, 34 F.C.C. 217, 227

(1963) (initial opinion); Chicago Bd. of Trade v. United States, 223 F.2d 348, 350 (D.C. Cir. 1955).

The Commission has recognized, however, that additional factors may properly influence rate structure. Thus, it has allowed individual rates producing a return in excess of capital costs when the "value of service" is relatively high. See ibid; Wilson & Co. v. United States, 355 F.2d 788, 798 (7th Cir. 1964), remanded, 382 U.S. 454 (1966).

The statistics submitted in FCC Docket No. 14650 indicate a wide range in the ratios of net-operating earnings to net investment for particular Bell System service. The average is 7.5 percent. For message-toll telephone, the ratio is 10 percent. For television and audio transmission, experimental services, and other "miscellaneous" services together, however, the ratio is only 1.1 percent -- roughly one-tenth the ratio for message-toll telephone. See FCC Docket No. 14650, AT&T Exhibits 80, 81.

The Commission has also allowed low rates when required to meet competition. In the "TELPAK" case, a carrier established preferential rates in order to compete with microwave services. The Commission approved, in principle, certain low rates because they were necessary to meet competition. In re American Tel. & Tel. (TELPAK), 38 F.C.C. 370 (1964); aff'd, American Trucking Ass'ns Inc. v. FCC, 8 Pike & Fischer RR 2026 (1966), cert. denied, 35 U.S.L. Week 3503 (1967). (This approval was subject to the proviso that the low rates be compensatory. 38 F.C.C. at 395. Presumably, this required that the rates return marginal cost plus some contribution toward fixed costs.)

Until 1958, the Commission allowed special low rates for telegrams between certain military personnel and their families. This concession was regarded as a suitable recognition for the performance of the military in World War II. See Western Union, 25 F.C.C. 532, 534 (1958) (concurring opinion).

Finally, the Commission has approved preferential rates for the press on the ground of its important public service. In American Tel. & Tel. Co. (Private Line Case), 34 F.C.C. 217 (1963) (initial opinion), the Commission found that private-line rates were too low and ordered rate increases. Several press associations protested, claiming that an increase in press charges would impair the desirable objective of providing widespread dissemination of the news. The Commission's initial decision stated that the record did not contain any information showing that impairment would result if a rate increase was ordered on an across the board basis. [Id. at 233.] Upon a petition for reconsideration, however, the Commission determined that press rates should not be raised because an increase might hamper the distribution of news. In the Matter of American Tel. & Tel. Co. (Private Line Case), 34 F.C.C. 1094, 1098-99 (1963). (In conjunction with this action, the Commission ordered a separate investigation to determine the full impact of increased rates on news dissemination. Ibid.)

On the basis of all these authorities, the Commission has ample power to authorize the rate structure proposed for BNSC. And we emphasize again that BNSC, as a non-profit corporation, will not have stockholders expecting a fair return on their investment and that the commercial networks will have consented in advance, in a consortium agreement, to the BNSC rate structure.

III. THE PROPOSED ORGANIZATION AND OPERATIONS OF BNSC WOULD NOT CONFLICT WITH OTHER LEGISLATION.

A. BNSC Would Be Tax Exempt.

Comsat's Supplemental Brief concludes that BNSC would be "regarded as a taxable organization for federal income tax purposes." /_Id_. at 47._/ In our judgment, the Internal Revenue Code of 1954 and the applicable regulations are to the contrary.

Section 501 (c) (3) of the Code exempts from taxation:

> Corporations . . . organized and operated exclusively for . . . educational purposes . . . no part of the net earnings of which inures to the benefit of any private shareholder or individual, no substantial part of the activities of which is carrying on propaganda, or otherwise attempting to influence legislation, and which does not participate in, or intervene in (including the publishing or distributing of statements), any political campaign on behalf of any candidate for public office.

The relevant Treasury Regulations provide that:

> the term "educational," as used in § 501 (c) (3) relates to -
>
> . . .

> (b) The instruction of the public on subjects useful to the individual and beneficial to the community.
>
> . . .
>
> The following are examples of organizations which, if they otherwise meet the requirements of this section, are educational:
>
> . . .
>
> Example (3). An organization which presents a course of instruction by means of correspondence or through the utilization of television or radio.

Treas. Regs. § 1.501 (c) (3)-1(d) (3). These Regulations also provide that:

> An organization may meet the requirements of section 501 (c) (3) although it operates a trade or business as a substantial part of its activities, if the operation of such trade or business is in furtherance of the organization's exempt purpose or purposes and if the organization is not organized or operated for the primary purpose of carrying on an unrelated trade or business, as defined in section 513.

Treas. Regs. § 1.501 (c) (3)-1(e) (1).

BNSC would be organized and operated exclusively for "educational" purposes within the meaning of section 501 (c) (3) of the 1954 Code, as interpreted by the Treasury Regulations quoted above. Furthermore, under these Regulations the fact that BNSC would provide transmission facilities for commercial radio and television would not preclude its exemption under section 501 (c) (3). In the language of the Regulations, such service would be "in furtherance of the organization's exempt purpose or purposes" and BNSC would not be "organized or operated for the primary purpose of carrying on an unrelated trade or business, as defined in section 513."

Comsat's Supplemental Brief states, however, that BNSC would be a "feeder corporation" under section 502 of the 1954 Code. [*Id.* at 48.] Section 502 provides that:

> An organization operated for the primary purpose of carrying on a trade or business for profit shall not be exempt under section 501 on the ground that all of its profits are payable to one or more organizations exempt under section 501 from taxation.

BNSC will not come within the terms of section 502 for two related reasons. First, an exemption would not be sought "*merely* on the grounds that all . . . profits are payable to one or more organizations exempt from tax under this section [§ 501]." *H.R. Rep. No.* 2319, 81st Cong., 2d Sess. 41 (1950); *S. Rep. No.* 2375, 81st Cong., 2d Sess. 35 (1950). (Emphasis added.) Educational television will never become fully effective until a system of free regional and national interconnection is developed. BNSC will meet this need. That is its "primary purpose." It will respond to the call of the Carnegie Commission on Educational Television for:

> effective interconnection . . . both in order to distribute programs to educational television stations promptly and economically and to provide for live regional or national broadcasts when the occasion demands.

The Carnegie Commission on Educational Television Report on Public Television 7 (Bantam ed. 1967).

Second, BNSC will not be "an organization operated for the primary purpose of carrying on a trade or business for profit . . . ." BNSC will be organized and operated to help meet the needs of non-commercial television. To carry out this task, it will also transmit commercial television. But that will be incidental to its primary purpose, not the purpose itself.

Recent judicial decisions and the current position of the Internal Revenue Service are in full accord with the Foundation's view. In a series of recent cases the courts have held that if funds of an exempt organization are committed for qualified purposes, the organization will not lose its exemption merely because it engages in other activities to provide necessary funds. See, e.g., Boman v. Commissioner, 240 F.2d 767 (8th Cir. 1957); Lichter Foundation v. Welsh, 247 F.2d 431 (6th Cir. 1957); The Marian Foundation, 19 T.C.M. 99 (1960); Robert C. Olney, 17 T.C.M. 982 (1958). Similarly, Rev. Rul. 64-182, 1964-1 (Part I) Cum. Bull. 186 (1964) provides:

> A corporation organized exclusively for charitable purposes derives its income principally from the rental of space in a large commercial office building which it owns, maintains and operates. The charitable purposes of the corporation are carried out by aiding other charitable organizations, selected in the discretion of its governing body, through contributions and grants to such organizations for charitable purposes. Held, the corporation is deemed to meet the primary purpose test of section 1.501 (c) (3)-1(e) (1) of the Income Tax Regulations, and to be entitled to exemption from Federal income tax as a corporation organized and operated exclusively for charitable purposes within the meaning of section 501 (c) (3) of the Internal Revenue Code of 1954, where

> it is shown to be carrying on through such contributions and grants a charitable program commensurate in scope with its financial resources.

Finally, the special study by the Exempt Organization Council of the Internal Revenue Service, as summarized in *Rogovin*, *Tax Exemption: Current Thinking Within the Service*, *Proc. N.Y.U. 22nd Inst. on Fed. Tax* 945 (1964) is consistent with this position. *See generally Weithorn*, *Tax Techniques for Foundations and Other Exempt Organizations* § 32.03 [3] [a] (1966).

On the basis of these authorities, BNSC would obtain and retain tax-exempt status under the Internal Revenue Code of 1954. Before BNSC formally applies to the Commission for a license it will seek an Internal Revenue Service ruling concerning its exempt status.

B. *NASA Has Authority To Provide Launch Facilities For BNSC*.

Comsat concludes both in its Initial Brief and its Supplemental Brief that the National Aeronautics and Space Administration (NASA) is precluded from launching non-governmental communications satellites other than those of Comsat.

NASA must, of course, be the ultimate judge of its own authority. Obviously, before making application to the Commission, BNSC would seek appropriate assurances from NASA that it would provide the launch facilities necessary to carry out the program called for in the application. In our judgment, NASA clearly has statutory authority adequate to provide such facilities.

As Comsat's Initial Brief states, NASA's legislative mandate is to "plan, direct, and conduct aeronautical and space activities." 42 U.S.C. § 2473 (a) (1). The term "aeronautical and space activities" is defined to include:

> (A) research into, and the solution of problems of flight within and outside the earth's atmosphere, (B) the development, construction, testing, and operation for research purposes of aeronautical and space vehicles, and (C) such other activities as may be required for the exploration of space.

[42 U.S.C. § 2452.] The Comsat briefs cite no legislative history indicating that "such other activities as may be required for the exploration of space" should be interpreted to exclude launching BNSC's satellites. Furthermore, for at least the next decade virtually all efforts in satellite communications would seem to come within the term "research" as used in subsections (A) and (B). Finally, NASA is specifically authorized in its enabling legislation:

> to enter into and perform such contracts, leases, cooperative agreements, or other transactions as may be necessary in the conduct of its work and on such terms as it may deem appropriate . . . with any person, firm, association, corporation, or educational institution.

[42 U.S.C. § 2473(b) (5).]

In 1961, NASA concluded a Memorandum of Understanding with the Commission on "Respective Civil Space Communications Activities." See Hearings on Communications Satellites Before the House Committee on

Interstate and Foreign Commerce, 87th Cong., 1st Sess., pt. 1, at 6 (1961). It provides direct support for the Foundation's view. The memorandum stated:

> The statutory authority of NASA and the FCC appears adequate to enable each agency to proceed expeditiously with the research and development activities necessary to achieve a commercially operable communication satellite system. Special problems which may arise in connection with the regulation of a commercially operable system are being explored by both agencies, and may result in legislative recommendations at a later date.

Ibid.

It is, of course, true that NASA does not have authority to manage operating systems. This is the only point of the excerpt from Dr. Dryden's testimony before the Foreign Relations Committee quoted in Comsat's Initial Brief. [*Id*. at 19.] The Foundation's proposal would not require NASA to manage an operating system.

Comsat's Supplemental Brief also maintains: "The Satellite Act does not authorize the National Aeronautics and Space Administration (NASA) to provide launch services for non-governmental communications satellites to any entity except Comsat." [*Id*. at 33.] This statement, as far as it goes, is completely accurate. The Foundation has never maintained that the 1962 Act authorized NASA to provide launch services for BNSC. Rather, NASA's basic enabling legislation provides such authority.

NASA has properly interpreted the 1962 Act as a mandate to assist Comsat in the development of the international system. And in 1962, when the Communications Satellite Act was adopted, it was not thought likely, for economic and technical reasons, that domestic communications by satellite would be feasible within the next decade. Dr. Dryden of NASA stated, for example, that an operational synchronous system might be ten years away. See 108 Cong. Rec. 16868 (1962). At the same time, however, Dr. Dryden made it quite clear that:

> If a situation should develop, as I do not foresee, the Government having set up officially a corporation to establish a communications system around the world, if in spite of this somehow there was a development which indicated that the national interest was to be served by doing something different, I think we would consider it.

Hearings on Communications Satellite Act of 1962 Before the Senate Committee on Foreign Relations, 87th Cong., 2d Sess. 265 (1962).* An "unforeseen situation" has, of course, occurred. A synchronous satellite system is now both economically and technically feasible for domestic communications.

---

*This statement immediately precedes Dr. Dryden's remark that "unless the Congress established another provision for another operating communications system, there would be nothing to be gained by NASA offering its services to other --" quoted alone in Comsat's Initial Brief, p. 20 n. The remark should, therefore, be read in context.

Furthermore, Dr. Dryden specifically supported the language in section 102(d) that: "It is not the intention of Congress by this Act . . . to preclude the creation of additional communications satellite systems, if required to meet unique governmental needs, or if otherwise required in the national interest." [*Id.* at 267.] And of particular significance, he stated that "Internationally, I think there also may be a question as to whether the needs of the world are satisfied by a single system." *Ibid*.

Finally, Comsat's Supplemental Brief implies that the Senate's rejection of Senator Morse's proposed amendment to section 201(b), which would have directed NASA to "furnish the same services and assistance on the same basis to any other commercial satellite communications system which may be established," limits NASA's authorization under its enabling legislation. This proposal was one of some 65 amendments sponsored by Senator Morse on August 17, 1962, after cloture had been voted for the first time since 1927. *See* 108 *Cong. Rec*. 16816-78 (1962). The amendment in question was the 39th of these proposals. [*Id.* at 16856.] On that same day alone, other opponents of the measure offered at least 35 further amendments. [*Id.* at 16816-78.] And Senator Long had prepared some 50 or 60 revisions that he did not have an opportunity to introduce. [*Id.* at 16852.] None of these amendments were adopted. In fact, the scores of other modifications proposed after cloture were all summarily rejected as were more than 100 amendments before that time. The reason was stated by Senator Pastore, floor manager of the measure:

> We did not accept any amendment during the cloture period . . . . We have followed the policy and plan of tabling every single amendment, and the Senator from Rhode Island would be placed in a position of bad faith if he made an exception at this time . . . .
>
> . . .
>
> The purpose of the strategy was to send the bill to the House in such form that it would not come back to the Senate, and we would have legislation during the present session of Congress.

[*Id.* at 16878.] Similarly, Senator Mansfield stated "What we want, if we can get it, is a bill which will not be filibustered again." *Ibid.*

There is no merit, therefore, in Comsat's suggestion that the Senate's tabling of the amendment in question -- one of several hundred proposals disposed of in similar fashion -- represents any considered judgment concerning the power of NASA.

CONCLUSION

For more than a year, the parties to this proceeding have analyzed the legal issues now before the Commission for its decision. During the year, the Foundation has been engaged in a continuing examination of all aspects of its proposal to establish BNSC. The results of this examination can be simply stated.

We are convinced that under the 1934 Act the Commission has the power to authorize BNSC to establish and operate domestic satellite facilities as proposed by the Foundation, that this power was not precluded by either the 1962 Act or the 1964 International Agreements, and that the Commission's legislative mandate permits regulation of BNSC in all ways that the Commission may find appropriate.

Respectfully submitted,

The Ford Foundation

by McGeorge Bundy
McGeorge Bundy, President

Ginsburg and Feldman
Attorneys for the Ford Foundation

David Ginsburg
David Ginsburg

Lee R. Marks
Lee R. Marks

Thomas Ehrlich
Thomas Ehrlich,
Stanford, California
Of Counsel

THE LIBRARY OF
OCT 26 1967
CONTINUING EDUCATION